


3 1761 11709837 6











Digitized by the Internet Archive  
in 2023 with funding from  
University of Toronto

<https://archive.org/details/31761117098376>









Transport  
Canada

Transports  
Canada

Government  
Publications

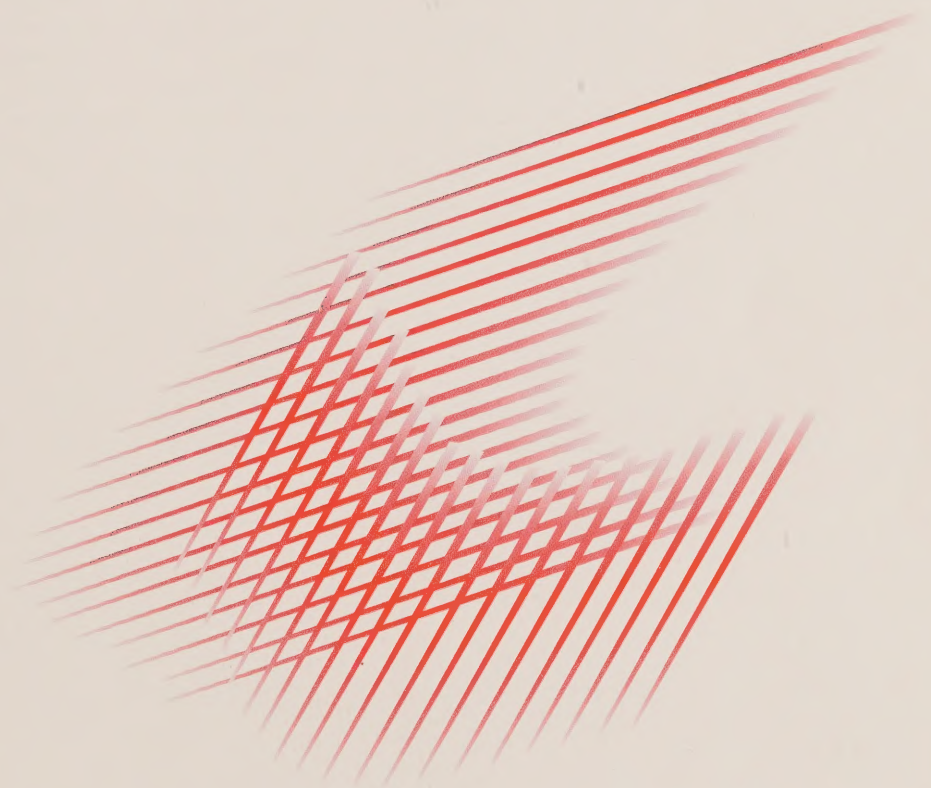
19

TP 13198E

CA1  
T  
-T61

# TRANSPORTATION IN CANADA 1999

ANNUAL REPORT



Canada

SHARING THE MEMORY  
SHAPING THE DREAM









Transport  
Canada

Transports  
Canada

## READER RESPONSE CARD

TRANSPORTATION IN CANADA 1999 – ANNUAL REPORT

Organization: \_\_\_\_\_

- Which section(s) of the Annual Report did you find of interest to you? (Use ✓)

Report Highlights	[ ]	5. Transportation — Energy and	[ ]	10. Transportation Infrastructure	[ ]
1. Introduction	[ ]	Environment	[ ]	11. Structure of the	
2. Transportation and the		6. Transportation and		Transportation Industry	[ ]
Canadian Economy	[ ]	Regional Economies	[ ]	12. Freight Transportation	[ ]
3. Government Spending on		7. Transportation and Employment	[ ]	13. Passenger Transportation	[ ]
Transportation	[ ]	8. Transportation and Trade	[ ]	14. Price, Productivity and	
4. Transportation and Safety	[ ]	9. Transportation and Tourism	[ ]	Financial Performance in	
				the Transportation Sector	[ ]

Use the following rating figures to answer the next two questions

1. To a great extent    2. To some extent    3. Very little    4. Not at all    5. No opinion

- To what extent does the report meet your requirements in the following areas?

☐ accuracy of the information    ☐ relevancy    ☐ currency and timeliness of the information    ☐ level of details provided    ☐ comprehensiveness

- To what extent are you satisfied with the format and presentation of the report?

☐ writing style (clear, concise, etc.)    ☐ graphics (table and figures)    ☐ presentation    ☐ organization (flow of the report)

- What do you feel should be done to improve the quality, format or presentation of this Annual Report? \_\_\_\_\_

For further information, please telephone (613) 993-4541 or fax message to (613) 957-3280.



Transport  
Canada

Transports  
Canada

## READER RESPONSE CARD

TRANSPORTATION IN CANADA 1999 – ANNUAL REPORT

Organization: \_\_\_\_\_

- Which section(s) of the Annual Report did you find of interest to you? (Use ✓)

Report Highlights	[ ]	5. Transportation — Energy and	[ ]	10. Transportation Infrastructure	[ ]
1. Introduction	[ ]	Environment	[ ]	11. Structure of the	
2. Transportation and the		6. Transportation and		Transportation Industry	[ ]
Canadian Economy	[ ]	Regional Economies	[ ]	12. Freight Transportation	[ ]
3. Government Spending on		7. Transportation and Employment	[ ]	13. Passenger Transportation	[ ]
Transportation	[ ]	8. Transportation and Trade	[ ]	14. Price, Productivity and	
4. Transportation and Safety	[ ]	9. Transportation and Tourism	[ ]	Financial Performance in	
				the Transportation Sector	[ ]

Use the following rating figures to answer the next two questions

1. To a great extent    2. To some extent    3. Very little    4. Not at all    5. No opinion

- To what extent does the report meet your requirements in the following areas?

☐ accuracy of the information    ☐ relevancy    ☐ currency and timeliness of the information    ☐ level of details provided    ☐ comprehensiveness

- To what extent are you satisfied with the format and presentation of the report?

☐ writing style (clear, concise, etc.)    ☐ graphics (table and figures)    ☐ presentation    ☐ organization (flow of the report)

- What do you feel should be done to improve the quality, format or presentation of this Annual Report? \_\_\_\_\_

For further information, please telephone (613) 993-4541 or fax message to (613) 957-3280.



**MAIL**  **POSTE**

Canada Post Corporation  
Société canadienne des postes  
Postage paid Port payé  
if mailed in Canada si posté au Canada  
**Business Reply Réponse d'affaires**

**0209372399 01**



0209372399-K1A0N5-BR01

TRANSPORT CANADA, ACA  
ECONOMIC ANALYSIS  
PLACE DE VILLE  
330 SPARKS ST  
OTTAWA ON K1A 0N5

TRANSPORTS CANADA, ACA  
ANALYSE ÉCONOMIQUE  
PLACE DE VILLE  
330 RUE SPARKS  
OTTAWA ON K1A 0N5

**MAIL**  **POSTE**

Canada Post Corporation  
Société canadienne des postes  
Postage paid Port payé  
if mailed in Canada si posté au Canada  
**Business Reply Réponse d'affaires**

**0209372399 01**



0209372399-K1A0N5-BR01

TRANSPORT CANADA, ACA  
ECONOMIC ANALYSIS  
PLACE DE VILLE  
330 SPARKS ST  
OTTAWA ON K1A 0N5

TRANSPORTS CANADA, ACA  
ANALYSE ÉCONOMIQUE  
PLACE DE VILLE  
330 RUE SPARKS  
OTTAWA ON K1A 0N5



Transport  
Canada

Transports  
Canada

TP 13198E

---

# TRANSPORTATION IN CANADA 1999

---

## ANNUAL REPORT



2000  
Canada

Canada

SHARING THE MEMORY  
SHAPING THE DREAM



© Minister of Public Works and Government Services, Canada, 2000

Cat. No. T1-10/1999E

ISBN 0-662-28547-6

Également disponible en français sous le titre «Les transports au Canada 1999»

Minister of Transport



Ministre des Transports

Ottawa, Canada K1A 0N5

4/5/00

Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D.  
Governor General of Canada  
Rideau Hall  
1 Sussex Drive  
Ottawa, Ontario  
K1A 0A1

Excellency:

I am pleased to submit to your attention the 1999 Annual Report on the state of transportation in Canada. This report responds to the requirements set out in section 52 of the *Canada Transportation Act*.

The 1999 annual report provides a wealth of information on the state of the Canadian transportation system at the turn of the century. It looks at the safety aspects of transport activities and examines the performance of the Canadian transportation system, as well as events which influenced it.

Canada experienced in 1999 a vigorous economic expansion, which translated into higher levels of demand for transport services. During the course of the year, the Transportation Climate Change Table was quite active and looked at a number of options to reduce transportation's green house gas emissions. The Annual Report gives an overview of this work.

For most Canadian transport carriers, the strong level of demand reflected positively on their financial results in 1999. But there were exceptions. The airline restructuring is indicative of the government's dedicated efforts to maintain a viable transport system while allowing the private sector, driven by market forces, to strive for efficiency.

As we enter into the new millennium and the age of electronic commerce, Canada's growth, standard of living and trade activities will depend more than ever on our capacity to move people and goods safely, efficiently and reliably.

Yours sincerely,

Hon. David M. Collenette, P.C., M.P.

Canada





# Table of Contents

## Chapter

## Page

### *Reader Response Card*

<b>REPORT HIGHLIGHTS</b> .....	i
<b>1. Introduction</b> .....	1
<b>2. Transportation and the Canadian Economy</b> .....	3
The Canadian Economy in 1999 .....	3
Canada's Population and Transportation .....	5
Contribution of Transportation to the Economy .....	8
<b>3. Government Spending on Transportation</b> .....	11
Introduction .....	11
Government Transportation Expenditures .....	11
Overview of Expenditures and Revenues by Mode .....	15
<b>4. Transportation and Safety</b> .....	17
Transportation Occurrences .....	17
Transportation of Dangerous Goods .....	27
<b>5. Transportation — Energy and Environment</b> .....	29
Transportation and Climate Change .....	29
Transport Canada's Sustainable Development Strategy — An Update .....	33
Legislation Aimed at Improving Environmental Quality .....	36
Energy Demand .....	37
Looking Ahead .....	38
<b>6. Transportation and Regional Economies</b> .....	39
The Supply of Transportation .....	39
Demand for Transportation .....	44
<b>7. Transportation and Employment</b> .....	49
Workforce .....	49
Average Salaries .....	58
Labour Action in Transportation .....	61
<b>8. Transportation and Trade</b> .....	63
Domestic Trade .....	63
International Trade .....	66
<b>9. Transportation and Tourism</b> .....	75
Tourism Expenditures .....	75
Travel Overview .....	77
<b>10. Transportation Infrastructure</b> .....	83
Rail Transportation Infrastructure .....	83
Road Transportation Infrastructure .....	86
Marine Transportation Infrastructure .....	90
Air Transportation Infrastructure .....	103

# Table of Contents (Cont'd)

<i>Chapter</i>	<i>Page</i>
<b>11. Structure of the Transportation Industry</b> .....	111
Rail Industry Structure .....	111
Trucking Industry .....	113
Bus Transportation Industry .....	119
Marine Transportation Industry .....	121
Air Transportation Industry .....	129
<b>12. Freight Transportation</b> .....	137
Rail Transportation .....	137
Trucking Transportation .....	141
Maritime Transportation .....	145
Air Transportation Industry .....	152
<b>13. Passenger Transportation</b> .....	155
Rail Transportation .....	155
Bus Transportation .....	155
Automobile Transportation .....	158
Marine Transportation .....	159
Air Transportation .....	159
<b>14. Price, Productivity and Financial Performance in the Transportation Sector</b> .....	171
Rail Industry .....	171
Trucking Industry .....	174
The Bus Industry .....	176
Air Transport Industry .....	178

# LIST OF TABLES

<i>Table</i>	<i>Title</i>	<i>Page</i>
<b>2.</b>	<b>Transportation and the Canadian Economy</b>	
2-1:	GENERAL ECONOMIC INDICATORS . . . . .	3
2-2:	POPULATION BY PROVINCE/TERRITORY AND AGE . . . . .	5
2-3:	CANADIAN TRAVELLERS BY AGE GROUP, 1998 . . . . .	7
2-4:	COMMERCIAL TRANSPORTATION AS A PROPORTION OF GDP AT FACTOR COST . . . . .	9
2-5:	TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT . . . . .	9
<b>3.</b>	<b>Government Spending On Transportation</b>	
3-1:	GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION . . . . .	11
3-2:	GOVERNMENT REVENUES FROM TRANSPORT USERS . . . . .	12
3-3:	FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES . . . . .	13
3-4:	DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE . . . . .	13
3-5:	DISTRIBUTION OF PROVINCIAL/TERRITORIAL AND LOCAL EXPENDITURES BY PROVINCE . . . . .	14
3-6:	TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT . . . . .	15
<b>4.</b>	<b>Transportation and Safety</b>	
4-1:	TRANSPORTATION OCCURRENCES BY MODE, 1999 VS FIVE-YEAR AVERAGE (1994 – 1998) . . . . .	18
4-2:	ACCIDENT RATES IN TRANSPORTATION, 1999 VS FIVE-YEAR AVERAGE (1994 – 1998) . . . . .	18
4-3:	ACCIDENT RATES IN RAIL TRANSPORTATION, 1995 – 1999 . . . . .	19
4-4:	CROSSING ACCIDENTS BY PROVINCE, 1995 – 1999 . . . . .	19
4-5:	RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 1999 . . . . .	19
4-6:	TOTAL ROAD CASUALTY COLLISIONS AND PERSONS INJURED OR KILLED, 1993 – 1998 . . . . .	20
4-7:	ROAD FATALITIES BY CATEGORY OF ROAD USER, 1993 – 1998 . . . . .	21
4-8:	COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1997 . . . . .	21
4-9:	VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1997 . . . . .	22
4-10:	MARINE OCCURRENCES, 1994 – 1999 . . . . .	23
4-11:	ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1990 – 1999 . . . . .	25
4-12:	ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1990 – 1999 . . . . .	26
4-13:	FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1990 – 1999 . . . . .	26
4-14:	FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1994 – 1999 . . . . .	27
4-15:	REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS BY MODE OF TRANSPORT, 1990 – 1999 . . . . .	27
4-16:	DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1990 – 1999 . . . . .	28
4-17:	TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1990 – 1999 . . . . .	28
<b>5.</b>	<b>Transportation — Energy and Environment</b>	
5-1:	MEMBERSHIP OF THE TRANSPORTATION CLIMATE CHANGE TABLE . . . . .	29
5-2:	CRITERIA FOR ASSESSING TRANSPORTATION GHG MEASURES . . . . .	31
5-3:	MOST PROMISING MEASURES . . . . .	33
5-4:	PROMISING MEASURES . . . . .	33
5-5:	TRANSPORT CANADA'S EIGHT STRATEGIC ENVIRONMENTAL CHALLENGES . . . . .	34
5-6:	TRANSPORTATION ENERGY USE BY FUEL, 1980 – 1998 . . . . .	37
<b>6.</b>	<b>Transportation and Regional Economies</b>	
6-1:	ANNUAL GROWTH IN PROVINCIAL ECONOMIES, REAL GROSS DOMESTIC PRODUCT, 1998 . . . . .	40
6-2:	ANNUAL GROWTH IN EXPORTS AND IMPORTS, 1998 . . . . .	41
6-3:	ANNUAL GROWTH IN PROVINCIAL TRANSPORTATION INDUSTRIES, 1998 . . . . .	42
6-4:	ANNUAL GROWTH IN EMPLOYMENT IN THE PROVINCIAL TRANSPORTATION INDUSTRY, 1998 . . . . .	44
6-5:	ANNUAL GROWTH IN PROVINCIAL TRANSPORT-RELATED EXPENDITURES, 1998 . . . . .	45
<b>7.</b>	<b>Transportation and Employment</b>	
7-1:	TRANSPORTATION EMPLOYMENT BY CATEGORY . . . . .	50
7-2:	EMPLOYMENT BY RAIL TRANSPORT SERVICES . . . . .	50
7-3:	EMPLOYMENT BY FOR-HIRE TRUCKING FIRMS . . . . .	51
7-4:	EMPLOYMENT BY REGION, TRUCKING INDUSTRY . . . . .	51
7-5:	TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY . . . . .	52



<i>Table</i>	<i>Title</i>	<i>Page</i>
7-6:	FULL-TIME EMPLOYEES IN THE BUS INDUSTRY	53
7-7:	AVERAGE ANNUAL EMPLOYMENT IN THE WATER TRANSPORT INDUSTRY	53
7-8:	EMPLOYMENT IN THE AIR INDUSTRY	54
7-9:	OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT	54
7-10:	EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES	55
7-11:	EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 AND 1999	55
7-12:	EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1995 – 1999	56
7-13:	EMPLOYMENT – NAS AIRPORTS, 1999	56
7-14:	PLANNED FULL-TIME EQUIVALENTS, FEDERAL DEPARTMENTS AND AGENCIES	56
7-15:	EMPLOYMENT, ASSOCIATED SERVICES – MARINE	57
7-16:	AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR	58
7-17:	AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY	59
7-18:	AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1990 – 1999	59
7-19:	AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY	60
7-20:	ANNUAL LABOUR COSTS PER EMPLOYEE, CANADIAN BASED MARINE CARRIERS, 1990 – 1998	60
7-21:	ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS	61
7-22:	LABOUR ACTION BY MODE OF TRANSPORT	62

## **8. Transportation and Trade**

8-1:	DOMESTIC TRADE BY SECTOR, 1998	64
8-2:	DOMESTIC TRANSPORTATION FLOWS, 1998	64
8-3:	DOMESTIC TRANSPORTATION FLOWS, BY SECTOR AND MODE, 1998	65
8-4:	INTERPROVINCIAL TRADE, MAIN EAST-WEST ROUTES, 1998	66
8-5:	CANADA-US TRADE BY MODE AND SECTOR, 1992 – 1998	68
8-6:	CANADA-US TRADE BY PROVINCE, 1988 AND 1998	68
8-7:	CANADA-US TRANSBORDER TRADE SHOWING MAIN NORTH-SOUTH TRADE FLOWS, 1998	69
8-8:	CANADA-US TRADE, SHARE OF DUTIES ON GOODS IMPORTED FROM THE US FOR SELECTED YEARS FROM 1988 TO 1998	70
8-9:	EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED UNIT	70
8-10:	CANADA-NON-US COUNTRIES TRADE, BY MODE AND SECTOR, 1992 – 1998	71
8-11:	CANADA'S EXPORT TRADE WITH NON-US COUNTRIES, MAIN TRADE FLOWS, 1998	73
8-12:	CANADA'S IMPORT TRADE WITH NON-US COUNTRIES, MAIN TRADE FLOWS, 1998	73
8-13:	CANADA/NON-US COUNTRIES TRADE, SHARE OF DUTIES ON GOODS IMPORTED FROM NON-US COUNTRIES, SELECTED YEARS FROM 1988 – 1998	73
8-14:	CANADIAN EXPORTS BY COUNTRY GROUPINGS, 1998 AND 1999	74
8-15:	CANADIAN IMPORTS BY COUNTRY GROUPINGS, 1998 AND 1999	74

## **9. Transportation and Tourism**

9-1:	SUPPLY AND DEMAND OF TOURIST GOODS IN CANADA, 1998	77
9-2:	DOMESTIC AND INTERNATIONAL TRAVEL IN CANADA, 1998 – 1999	78
9-3:	DISTRIBUTION OF DOMESTIC TRAVEL BY PROVINCE, 1988	78
9-4:	DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1998	79
9-5:	CANADA/US TRAVEL BY TRANSPORTATION MODE, 1999	80

## **10. Transportation Infrastructure**

10-1:	RAILWAYS IN CANADA, 1999	83
10-2:	CN AND CPR RATIONALIZATION BY PROVINCE, 1999	85
10-3:	CN AND CPR RATIONALIZATION BY PROVINCE, 1990 – 1999	85
10-4:	PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE	86
10-5:	VEHICLE TRAFFIC LEVELS ON THE NATIONAL HIGHWAY SYSTEM, 1986, 1993 AND 1996	87
10-6:	ANNUAL VEHICLE TRAFFIC AT MAJOR BORDER CROSSINGS, 1997 – 1998	89
10-7:	PORTS NO LONGER UNDER THE ADMINISTRATION OF TRANSPORT CANADA, 1996 – 1999	90
10-8:	STATUS OF TRANSPORT CANADA'S PORTS BY PROVINCE AND YEAR, 1996 – 1999	91
10-9:	FINANCIAL PROFILE, PORTS CANADA PORTS, 1998	92
10-10:	FINANCIAL RESULTS OF MAJOR AND DIVISIONAL PORTS, 1994 – 1998	92
10-11:	HARBOUR COMMISSIONS FINANCIAL RESULTS, 1998	93

<i>Table Title</i>	<i>Page</i>
10-12: FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1994/95 – 1998/99	93
10-13: TOTAL TONNAGE HANDLED IN CANADA'S PORT SYSTEM 1997 – 1998	94
10-14: FISHING HARBOURS BY HARBOUR TYPE AND REGION, JANUARY 2000	94
10-15: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96 – 1999/2000	95
10-16: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, 1995/1996 – 1999/2000	95
10-17: MANAGEMENT TYPE AT RECREATIONAL HARBOURS IN THE DEPARTMENT OF FISHERIES AND OCEANS' INVENTORY BY REGION	95
10-18: ST. LAWRENCE SEAWAY CARGO MOVEMENTS	97
10-19: ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 1990 – 1998	98
10-20: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1988/89 - 1997/98	98
10-21: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1999	99
10-22: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1995 – 1999	99
10-23: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1995 – 1999	100
10-24: CANADIAN COAST GUARD, 1999 VESSEL, AIRCRAFT AND FACILITY ASSETS	102
10-25: CANADIAN COAST GUARD, REVENUES AND EXPENDITURES, 1995/96 – 1999/2000	102
10-26: REVENUES AND BUDGETED EXPENDITURES OF THE CANADIAN COAST GUARD, 1999/2000	103
10-27: SUMMARY OF CANADA'S AIR TRAFFIC CONTROLLERS, TOWERS, AREA CONTROL CENTRES, AND TERMINAL CONTROL UNITS, 1995 – 1999	103
10-28: FINANCIAL SUMMARY FOR NAV CANADA, 1998 – 1999	104
10-29: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 1999	105
10-30: AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS, DECEMBER 31, 1999	107
10-31: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1998	108
10-32: AIRPORT CAPITAL ASSISTANCE PROGRAM, EXPENDITURES BY PROVINCE, 1995/96 – 1998/99	109

## **11. Structure of the Transportation Industry**

11-1: MAJOR SHORTLINE OPERATIONS IN CANADA, 1999	111
11-2: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1998	115
11-3: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1998	116
11-4: MAJOR FOR-HIRE CARRIERS BY SECTOR - 1999	117
11-5: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIER - 1997	118
11-6: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1987 – 1999	118
11-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1998	119
11-8: TOTAL REVENUES BY INDUSTRY SECTOR, 1995 – 1998	119
11-9: CANADIAN REGISTERED FLEET BY TYPE, 1979 – 1999	123
11-10: EAST COAST CANADIAN-FLAG CARGO FLEET – 1,000 GRT AND OVER, 1999	124
11-11: SHIPPING CONFERENCES SERVING CANADA IN 1999	126
11-12: GLOBAL AIRLINE ALLIANCES, 1999	130
11-13: MARKET SHARES OF AIRLINES, JULY 1999	130
11-14: AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE	130
11-15: CANADIAN CARRIERS OPERATING FOR US-BASED COURIER ENTITIES	130
11-16: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 1999	131
11-17: AIR CANADA AND CANADIAN AIRLINES REGIONAL CODE-SHARE PARTNERS AS OF DECEMBER 31, 1999	131
11-18: INDEPENDENT LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF JULY 1, 1999	132
11-19: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 1999	132
11-20: SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 1999	133
11-21: PERSONNEL LICENCES AND PERMITS BY PROVINCE, DECEMBER 1999	133

## **12. Freight Transportation**

12-1: GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY 1997 AND 1998	138
12-2: FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1998	141
12-3: FOR-HIRE TRUCK INTERNATIONAL TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1998	141
12-4: FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1998	142
12-5: FOR-HIRE TRUCKING ACTIVITY TRAFFIC BY COMMODITY GROUP, 1998	144
12-6: REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCES/TERRITORY, 1999	144
12-7: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1997 TO 1999	144
12-8: REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCES/TERRITORY, 1999	145

<i>Table</i>	<i>Title</i>	<i>Page</i>
12-9:	CANADA'S MARINE TRAFFIC STATISTICS, BY SECTOR, 1986 - 1998	146
12-10:	CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1998	146
12-11:	MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1998	147
12-12:	SHARE OF TONNAGE CARRIED BY FOREIGN FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 - 1998	147
12-13:	VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1998	148
12-14:	CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 - 1998	148
12-15:	LINER TRAFFIC BY REGION, 1998	148
12-16:	CANADA'S MARITIME TRADE WITH THE US, 1986 - 1998	149
12-17:	CANADA'S MARINE TRAFFIC TO THE US, 1998	150
12-18:	CANADA'S MARINE TRAFFIC FROM THE US, 1998	150
12-19:	CANADA'S MARITIME OVERSEAS TRADE, 1986 - 1998	150
12-20:	CANADA'S MARINE TRAFFIC TO OVERSEAS, 1998	151
12-21:	CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1998	151
12-22:	GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 - 1998	152
12-23:	OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 - 1998	152
12-24:	VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 - 1998	153
12-25:	VALUE OF CANADIAN EXPORTS BY AIR AND MAIN DESTINATIONS, 1998	153
12-26:	VALUE OF CANADIAN IMPORTS BY AIR, MAIN COUNTRIES OF ORIGIN, 1998	153

### **13. Passenger Transportation**

13-1:	PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 - 1998	155
13-2:	SCHEDULED INTERCITY BUS SERVICE CORRIDORS	156
13-3:	URBAN TRANSIT FLEET COMPOSITION, 1991 - 1998	157
13-4:	REGISTERED LIGHT VEHICLES BY PROVINCE/TERRITORY, 1999	158
13-5:	CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990-1999	159
13-6:	COUNTRIES / TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 1999	160
13-8:	DOMESTIC PASSENGER TRAFFIC, 1988 - 1998	161
13-8:	NEW OR ADDITIONAL SCHEDULED AIR SERVICES, 1999	161
13-9:	COMPETITION IN DOMESTIC AIR MARKETS AS OF JULY 1, 1999	162
13-10:	NUMBER OF DOMESTIC MARKETS SERVED INCLUDING CHARTERS AS OF JULY 1, 1999	162
13-11:	CANADA-US AIR PASSENGERS: SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 1998	163
13-12:	NUMBER OF US AIRPORTS SERVED (SCHEDULED NONSTOP ONLY) AS OF JULY 1, 1999	163
13-13:	NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 1999	164
13-14:	NATIONAL AIRPORT SYSTEM (NAS), NUMBER OF INTERNATIONAL DESTINATIONS SERVED (SCHEDULED DIRECT ONLY) AS OF JULY 1, 1999	164
13-15:	CANADA - INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 1998	165

### **14. Price, Productivity and Financial Performance in the Transportation Sector**

14-1:	PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY	171
14-2:	THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS	173
14-3:	REVENUES PER EMPLOYEE FOR VIA RAIL, REGIONAL AIRLINES AND THE BUS INDUSTRY	174
14-4:	VIA RAIL'S FINANCIAL PERFORMANCE RESULTS	174
14-5:	THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS	175
14-6:	SUMMARY OF FINANCIAL INDICATORS FOR ALL INTER-CITY BUS INDUSTRIES	176
14-7:	SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS, 1991 - 1998	177
14-8:	FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES	178
14-9:	IMPACT OF NAVAID FEES ON CANADIAN CARRIERS	179
14-10:	SUMMARY OF FINANCIAL RESULTS FOR THE AIRLINE INDUSTRY	180
14-11:	PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 TO 1998	181
14-12:	PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1991 AND 1998	181
14-13:	EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1991 TO 1998	182
14-14:	COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991 AND 1996 - 1998	182



# LIST OF FIGURES

<i>Figure Title</i>	<i>Page</i>
<b>2. Transportation and the Canadian Economy</b>	
2-1: REAL GDP BY MAJOR SECTORS . . . . .	3
2-2: REAL GDP IN CANADA AND OTHER REGIONS . . . . .	4
2-3: MERCHANDISE TRADE . . . . .	4
2-4: REAL PERSONAL DISPOSABLE INCOME PER CAPITA . . . . .	5
2-5: INTERNATIONAL OVERNIGHT TRAVEL, 1991 – 1999 . . . . .	5
2-6: AVERAGE ANNUAL RATES OF INTERPROVINCIAL MIGRATION, 1989 – 1998 . . . . .	6
2-7: AGE PYRAMID OF THE CANADIAN POPULATION, 1978 AND 1998 . . . . .	6
2-8: AVERAGE ANNUAL CMA GROWTH RATES, 1991 – 1999 . . . . .	7
2-9: MODE OF TRANSPORTATION TO WORK . . . . .	8
2-10: COMMUTING DISTANCE TO WORK . . . . .	8
<b>3. Government Spending On Transportation</b>	
3-1: PROVINCIAL/TERRITORIAL AND LOCAL EXPENSES IN TRANSPORT . . . . .	14
<b>4. Transportation and Safety</b>	
4-1: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS, 1990 – 1999 . . . . .	18
4-2: NUMBER OF CROSSING AND TRESPASSER ACCIDENTS SINCE DIRECTION 2006, 1994 – 1999 . . . . .	20
4-3: THREE-YEAR AVERAGE NUMBER OF FATALITIES BY PROVINCE, 1996 – 1998 . . . . .	21
4-4: PERCENTAGE OF ROAD COLLISIONS AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1997 . . . . .	21
4-5: AVERAGE MOTOR VEHICLE FATALITY RATES AMONG OECD COUNTRIES, 1996 – 1998 . . . . .	22
4-6: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL TYPE . . . . .	23
4-7: SHIPPING ACCIDENTS BY TSB REGION, 1999 . . . . .	24
4-8: COMMERCIAL VESSEL ACCIDENT RATE, 1994 – 1999 . . . . .	24
<b>5. Transportation – Energy and Environment</b>	
5-1: KYOTO PROTOCOL IMPLICATIONS FOR TRANSPORT SECTOR GREENHOUSE GAS EMISSION PROJECTIONS, 1990 – 2020 . . . . .	30
5-2: SOURCE OF TRANSPORTATION GREENHOUSE GAS EMISSIONS, 1997 . . . . .	30
5-3: TOTAL ENERGY USE IN THE CANADIAN ECONOMY BY SECTOR – FIVE HIGHEST ENERGY CONSUMERS, 1980 – 1998 . . . . .	37
5-4: TRANSPORTATION ENERGY USE BY MODE, 1998 . . . . .	37
<b>6. Transportation and Regional Economies</b>	
6-1: PROVINCIAL ECONOMIES AS A PERCENTAGE OF THE CANADIAN ECONOMY, 1998 . . . . .	40
6-2: PROVINCIAL EXPORTS AND IMPORTS AS A PERCENTAGE OF THE NATIONAL TOTALS, 1998 . . . . .	41
6-3: PROVINCIAL TRANSPORTATION INDUSTRIES AS A PERCENTAGE OF NATIONAL TRANSPORTATION INDUSTRIES, 1998 . . . . .	42
6-4: PROVINCIAL TRANSPORTATION INDUSTRY EMPLOYMENT AS A PERCENTAGE OF NATIONAL TOTALS, 1998 . . . . .	43
6-5: PROVINCIAL TRANSPORT-RELATED EXPENDITURES AS A PERCENTAGE OF NATIONAL TOTALS, 1998 . . . . .	45
<b>7. Transportation and Employment</b>	
7-1: AVERAGE WEEKLY EARNINGS, BY MODE . . . . .	58
7-2: NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1990 – 1999 . . . . .	61
7-3: LABOUR ACTION, 1990 – 1999 . . . . .	62
<b>8. Transportation and Trade</b>	
8-1: DOMESTIC TRADE BY TYPE, 1992 – 1998 . . . . .	63
8-2: DOMESTIC TRADE BY SECTOR, 1992 – 1998 . . . . .	64
8-3: INTRAPROVINCIAL TRADE BY PROVINCE, 1992 AND 1998 . . . . .	65
8-4: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1998 . . . . .	66
8-5: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, OTHER REGIONS AS ORIGIN, 1998 . . . . .	66
8-6: TRENDS – INTERPROVINCIAL TRADE VERSUS EXPORTS AND IMPORTS, 1992 – 1998 . . . . .	66
8-7: INTERNATIONAL TRADE, BY TYPE, 1992 – 1998 . . . . .	67
8-8: CANADA–US TRADE, BY US REGION, 1988 AND 1998 . . . . .	68
8-9: CANADA–US TRADE, MAIN ONTARIO TRADE FLOWS, 1998 . . . . .	69
8-10: CANADA–US TRADE, MAIN CANADIAN REGIONS TRADE FLOWS, 1998 . . . . .	70
8-11: EXPORTS TO NON-US COUNTRIES, 1992 – 1998 . . . . .	70

## Figure Title

## Page

8-12:	IMPORTS FROM NON-US COUNTRIES, 1992 – 1998	71
8-13:	IMPORTS FROM NON-US COUNTRIES BY PROVINCE OF CLEARANCE, 1988 VS 1998	71
8-14:	EXPORTS TO NON-US COUNTRIES BY PROVINCE OF ORIGIN, 1988 VS 1998	71
8-15:	EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1998	72
8-16:	IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1998	72

## 9. Transportation and Tourism

9-1:	DISTRIBUTION OF TOURISM SPENDING IN CANADA, 1998	76
9-2:	TOURISM SPENDING ON OVERNIGHT TRIPS IN CANADA BY PROVINCE 1998	76
9-3:	QUARTERLY DISTRIBUTION OF TOURISM SPENDING ON TRANSPORTATION, 1986 – 1999	76
9-4:	CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 – 1999	77
9-5:	INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 1999	79
9-6:	SAME-DAY CANADA/US AUTOMOBILE EXCURSIONS, 1996 – 1999	79
9-7:	OVERNIGHT CANADA/US EXCURSIONS, 1996 – 1999	80
9-8:	DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1997 AND 1998	80
9-9:	VISITORS TO CANADA FROM ASIA, 1990 – 1999	81
9-10:	VISITORS TO CANADA FROM EUROPE, 1990 – 1999	81
9-11:	VISITORS FROM COUNTRIES OTHER THAN THE UNITED STATES BY REGION 1997 – 1999	81
9-12:	CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES 1996 – 1998	82

## 10. Transportation Infrastructure

10-1:	CHANGES IN CANADA'S RAIL NETWORK, 1999	84
10-2:	CUMULATIVE CN AND CPR RATIONALIZATION, 1990 – 1999	85
10-3:	NATIONAL HIGHWAY SYSTEM	87
10-4:	NATIONAL HIGHWAY SYSTEM DAILY VEHICLE LEVELS, 1996	88
10-5:	ANNUAL TWO-WAY VEHICLE TRAFFIC BETWEEN CANADA AND THE UNITED STATES, 1986 – 1998	89
10-6:	DIVESTITURE STATUS OF REGIONAL, LOCAL AND REMOTE PORTS	91
10-7:	TRAFFIC SHARES BY PORT GROUPS, 1998	94
10-8:	GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM	96
10-9:	PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 1999	100
10-10:	AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1995 – 1999	103
10-11:	NAV CANADA FEE SHARES, 1999	104
10-12:	MAP OF AIRPORTS DIVESTITURE, 1999 – NATIONAL AIRPORT SYSTEM AIRPORTS	105
10-13:	MAP OF AIRPORTS DIVESTITURE, 1999 – REGIONAL / LOCAL AIRPORTS	106
10-14:	MAP OF AIRPORTS DIVESTITURE, 1999 – SMALL AND ARCTIC AIRPORTS	106

## 11. Structure of the Transportation Industry

11-1:	SHORTLINE INDUSTRY GROWTH, 1990 – 1999	111
11-2:	MONTHLY GRAIN LOADINGS BY RAIL, 1997 – 1999	112
11-3:	TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1998	113
11-4:	NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF \$1 MILLION OR MORE, 1990 – 1998	116
11-5:	NUMBER OF BANKRUPTCIES, TRUCKING VS TOTAL ECONOMY, 1989 – 1999	118
11-6:	BUS INDUSTRY STRUCTURE AND REVENUES, 1998	119
11-7:	CANADIAN REGISTERED FLEET, 1979 – 1999	123
11-8:	PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 1999	132

## 12. Freight Transportation

12-1:	TOTAL MONTHLY LOADINGS BY RAIL, 1997 – 1999	139
12-2:	MONTHLY GRAIN LOADINGS BY RAIL, 1997 – 1999	139
12-3:	MONTHLY INTERMODAL LOADINGS BY RAIL, 1997 – 1999	141
12-4:	TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1988 – 1998	141
12-5:	DOMESTIC VS INTERNATIONAL FOR-HIRE GENERAL FREIGHT TRAFFIC, 1990 – 1998	144
12-6:	DOMESTIC VS INTERNATIONAL FOR-HIRE FOOD PRODUCTS TRAFFIC, 1990 – 1998	144
12-7:	ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 1999	145
12-8:	CANADA'S MARINE TRAFFIC FLOWS, BY SECTOR, 1986 – 1998	146

<i>Figure</i>	<i>Title</i>	<i>Page</i>
12-9:	SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 – 1998	147
12-10:	CANADA'S MARITIME TRAFFIC WITH THE US, 1986 – 1998	149
12-11:	CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1998	151

### **13. Passenger Transportation**

13-1:	INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 1998	156
13-2:	SCHEDULED INTERCITY AND CHARTER SERVICES, REVENUE TRENDS, 1990 – 1998	156
13-3:	CHARTER BUS FLEET SIZE, 1981 – 1998	157
13-4:	CHARTER BUS FLEET UTILIZATION, 1981 – 1998	157
13-5:	URBAN TRANSIT FLEET SIZE, 1981 – 1998	157
13-6:	LONG-TERM TRENDS IN URBAN TRANSIT, 1981 – 1998	158
13-7:	DOMESTIC PASSENGER TRAFFIC BY REGION, 1998	161
13-8:	CANADA - US TRAFFIC, 1987 – 1999	162
13-9:	AVERAGE CANADA – US SCHEDULED CAPACITY (EXCLUDING CHARTERS), 1994 AND 1999	163

### **14. Price, Productivity and Financial Performance in the Transportation Sector**

14-1:	RAIL FREIGHT PRICE INDICES BY COMMODITY GROUP, 1991 – 1998	172
14-2:	CUMULATIVE ECONOMIC LOSSES AND NET COST REDUCTION, AIRLINE INDUSTRY, 1992 – 1998	180



## LIST OF APPENDICES

<i>Appendix</i>	<i>Title</i>	
	<b>Transportation and the Canadian Economy</b>	
2-1	PERSONAL EXPENDITURES ON TRANSPORTATION, 1998 . . . . .	10
2-2	TRANSPORTATION INVESTMENT BY INDUSTRY AND GOVERNMENT, 1997 . . . . .	10
	<b>Transportation and Regional Economies – Transport Related Demand and Investment</b>	
6-1a	TRANSPORT-RELATED EXPENDITURES BY PROVINCE AS PERCENTAGES OF NATIONAL TOTALS, 1998 . . . . .	46
6-1b	ANNUAL GROWTH IN TRANSPORT-RELATED EXPENDITURES BY PROVINCE IN 1998 . . . . .	46
6-2	PROVINCIAL TRANSPORT-RELATED INVESTMENT AS A PERCENTAGE OF NATIONAL INVESTMENT, 1997 . . . . .	47
	<b>Transportation Infrastructure</b>	
10-1	AIRPORTS CAPITAL ASSISTANCE PROGRAM – PROJECTS APPROVED IN 1999 . . . . .	110
	<b>Structure of Transportation Industry</b>	
11-1	RAILWAY OPERATORS BY REGION, 1999 . . . . .	134
11-2	SELECTED URBAN TRANSIT SYSTEMS OF IMPORTANCE TO CANADA . . . . .	135
	<b>Passenger Transportation</b>	
13-1	STATUS OF TRANSBORDER SCHEDULED AIR SERVICES BY AIRLINE DOMICILE, 1991 - 1998 . . . . .	166
13-2	STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999 . . . . .	167
13-3	INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 1999 – (EXCLUDING CANADA-US TRANSBORDER AIR SERVICES) . . . . .	170

# REPORT HIGHLIGHTS

## TRANSPORTATION AND THE CANADIAN ECONOMY

- The year 1999 saw vigorous growth of the Canadian economy. This was due in large part to investment spending on machinery and equipment and sustained consumer spending resulting from rising incomes, which drove growth in manufacturing production.
- The automotive sector did particularly well, including automotive export products.
- The strong US economy also produced strong merchandise export sales for Canadian firms. The energy, forestry, and machinery and equipment sectors enjoyed particularly significant increases.
- Despite the declining natural rate of population increase, the country's population grows at 1.1 per cent a year as a result of net positive population immigration. An average 300,000 Canadians migrate yearly from one province to another, mainly young adults driven by employment market considerations.
- The aging of the Canadian population and the variation in the age structure across Canada are drivers of changes in transportation demand. In addition, an increasing concentration of the Canadian population in large urban areas is adding pressure to transportation systems, as the automobile is the preferred mode of transportation used by Canadians to get to work.
- In 1999, transportation demand accounted for 13.2 per cent of GDP. Transportation demand grew in 1999 faster than the economy as a whole, as was the case for the last five years. This can be explained partly by the increasing importance of exports to the Canadian economy.

## GOVERNMENT SPENDING ON TRANSPORTATION

- In fiscal year 1998/99, total annual government spending on transportation was \$15.7 billion, an increase of 0.5 per cent over 1997/98. (This total does not include expenditures made by new entities such as port and airport authorities.)
- From 1994/95 to 1998/99, local governments increased their net expenditures on transportation by 2.5 per cent a year. Over the same period, the federal government has halved its net expenditures on transportation due to divestiture and commercialization initiatives.
- In fiscal year 1998/99, provincial government expenditures on transportation increased by nine per cent to reach \$7.9 billion.
- In 1999/2000, the revenues (excluding fuel tax revenues) accruing to the federal government from transportation are expected to total \$402 million, compared with \$1.0 billion in 1997/98. Airport lease and marine fees are two of the important sources of federal revenues from transportation.
- In 1998/99, the federal government generated \$4.7 billion in fuel tax revenues, while provincial governments generated \$6.7 billion.
- With the transfer of the operations of the Air Navigation System to NAV Canada and the divestiture of airports and ports to local authorities, the single largest federal transport expense in fiscal year 1999/2000 is tied to Coast Guard services.
- The two most significant direct federal subsidies, grants and contributions to transport by the federal government went in 1999/2000 to roads (\$228.9 million) and VIA Rail (\$170.3 million).

- At the provincial/territorial and local government level, spending on transportation represented \$14.5 billion in 1998/99. Spending on roads and highways was the most important transport-related provincial expenditure. Ontario and Quebec spend a lot on transit, while the territories spend relatively more on air transportation.
- For 1998/99, the modal breakdown of all government spending on transportation was \$14.4 billion on roads and transit systems, \$246 million on rail, \$740 million on marine transportation and \$71 million on air.

## TRANSPORTATION AND SAFETY

- The year 1999 represented a record low in the number of occurrences in air transportation. The most recent year for road accident information (1998) also showed significant improvement in safety records.
- A total of 1,129 rail-related accidents were reported in 1999, with 36 per cent of these accidents off the main track, 25 per cent at railway crossings and 11 per cent being main-track train derailments. The number of trespasser accidents rose from 78 to 94, still below the five-year average of 103. A total of 105 persons were fatally injured in rail-related accidents, down from the five-year average of 111.
- The year 1998 saw 2,927 fatalities on roads, the lowest annual total in 43 years. The number of casualty collisions was also down.
- The number of fatalities involving commercial vehicles increased slightly in 1997, due in part to the bus accident at Les Eboulements, Quebec, in October 1997.
- There were 525 shipping accidents in 1999, up seven per cent over 1998; 280 of these involved fishing vessels. For vessels involved in passenger transportation, ferry and passenger vessels, the number involved in accidents was comparable with the previous five-year average. Marine transport-related fatalities, at 29, were down from the previous year (48) and the five-year average (35).
- Canadian-registered aircraft were involved in 340 accidents in 1999, down 12 per cent from 1998. Of these, only seven involved airliners aircraft, and only one of these involved fatalities (2). Air fatalities, at 67, were down by 19 per cent from 1998.
- In 1999, there were 518 reportable dangerous goods accidents. Total deaths from accidents involving dangerous goods totalled 27, and only two of these fatalities were the direct result of a dangerous good release.

## TRANSPORTATION — ENERGY AND ENVIRONMENT

- In November 1999, the Transportation Climate Change Table completed its Options Paper which analyses options for a six per cent reduction of transportation's 1990 greenhouse gas emissions level by 2010. Under current trends, greenhouse gas emissions from transportation are expected to exceed 1990 levels by 32 per cent by 2010. A six per cent reduction from 1990 levels therefore implies a reduction of about 54 megatonnes by 2010.
- Road transport accounts for roughly 70 per cent of transportation emissions. Aviation, off-road uses and on-road diesel are the three transport sources of emissions expected to grow most rapidly between 1990 and 2020.
- The Table looked at costs and benefits of options across the entire transportation system. Measures grouped as passenger, road infrastructure, road vehicles and fuels, freight, and off-road were categorized as: *Most Promising Measures*, with positive benefits or costs less than \$10 per tonne; *Promising Measures*, with modest cost or complementing other measures; *Less Promising Measures*, higher cost measures with potential of greenhouse gas reduction in the medium or longer term or requiring significantly more analysis; and *Unlikely Measures*, those not warranting active consideration.
- *Most Promising Measures* could generate 10.8 megatonnes of reductions in 2010, while *Promising Measures* offer the potential to reduce emissions by a further 32 megatonnes. This would still be 11 to 14 megatonnes short of the Kyoto target.
- In 1999, progress was achieved in three areas of Transport Canada's Sustainable Development Action Plan: the launching of the Moving on Sustainable Transportation Program, which funds project proposals from environmental, industry, academic and other groups; the expansion of Transport Canada's Environmental Management System to a broader scope of departmental activities and operations; and the development of a draft set of sustainable performance indicators.
- The Canadian Council of Ministers of the Environment accepted Standards for Particulate Matter and Ozone, setting numerical air quality targets for protecting the environment and reducing human health risk.
- In 1999, new regulations under the *Canadian Environmental Protection Act* were approved, phasing in a reduction of sulphur in gasoline of more than 90 per cent by January 1, 2005.

- The International Civil Aviation Organization (ICAO) approved in 1999 regulatory changes to reduce nitrogen oxide emission levels by 16 per cent for engines produced after December 31, 2003.
- Royal Assent was given in 1999 to the new *Canadian Environmental Protection Act*, giving stronger powers to government to protect the environment and human health. For transportation, the Act expands the authority to control the components and the handling of fuels, and provides for a national fuels mark to be used at gas station pumps, and transfers regulatory authority for road vehicle emissions from Transport Canada to Environment Canada.
- In 1998, transportation accounted for about one third of energy used in the country.

## TRANSPORTATION AND REGIONAL ECONOMIES

- In terms of relative size of total transportation, Ontario, Quebec, British Columbia and Alberta are the top provinces, as are their provincial economies.
  - Ontario is the only province to show a lower share of Canada's transport activities than that of total economic activities, which is explained by population density and proximity to key markets.
  - Trucking experienced strong growth in 1998 due to exports, particularly in Ontario and Alberta. It declined, however, in British Columbia. Since the construction of the Confederation Bridge, trucking in Prince Edward Island has also grown significantly.
  - In 1998, declines in rail transportation were registered in all provinces but Quebec. For marine transportation, declines were observed in British Columbia and Quebec, compared with growth driven by imports in Nova Scotia and Newfoundland. In air transportation, only British Columbia and Nova Scotia registered declines.
  - Ontario led the growth in transportation employment in 1998 with 2.6 per cent, followed by Alberta and Quebec. Transportation employment growth was also strong in Newfoundland and Prince Edward Island. British Columbia faced declines. Growth in employment was mainly observed in trucking. Employment in rail declined in all provinces but Quebec. For air, only Alberta, British Columbia and Nova Scotia did not register increases in employment.
  - In 1998, growth in total transportation expenditures was driven mainly by British Columbia and Ontario. In British Columbia, it came from government spending, while in Ontario, it was driven by personal expenditures.
- In Alberta, growth was low. In Quebec, a decline was observed. In Newfoundland, Nova Scotia, New Brunswick and Manitoba, transport-related expenditures grew, while they declined in Saskatchewan.

## TRANSPORTATION AND EMPLOYMENT

- In 1999, almost 827,000 full-time employees worked in transportation, accounting for 6.9 per cent of total full-time employment in Canada. Of that total, 613,500 jobs were tied to transport services, 94,600 to transport-related services and 85,600 to the development and maintenance of transportation infrastructure. The rest were associated with transport jobs within governments.
- In 1998, the total number of rail-transport service employees declined by 4.5 per cent. Medium and large trucking firms engaged 0.8 per cent more employees, while small carriers employed 2.7 per cent fewer workers in 1997, the last year with official data. Employment in private trucking firms was down, while the number of owner-operators was up. Total employment in bus transportation increased in 1998. Growth in air transportation employment was 11 per cent in 1998 and six per cent in 1999. Average annual employment in marine transport was up by 2.1 per cent in 1999.
- In transport infrastructure, the number of people employed in both rail infrastructure services and road construction and maintenance did not change significantly in 1998. There were 12 per cent (estimated) more people working at airports in 1999. Ports authorities also increased their personnel in 1999. A decrease of eight per cent in 1999 was reported by the St. Lawrence Seaway Management Corporation. A slight increase in marine pilotage-related employment was noted in 1999.
- With respect to government services, the number of employees tied to transportation was down in 1999.
- The increase in average weekly earnings across all modes was in the order of 0.3 per cent in 1999, less than the increase for the economy as a whole.
- From 1990 to 1999, rail employees enjoyed the largest increase in average weekly salaries.
- A total of 12 labour stoppages was recorded for transportation during the first six months of 1999.



## TRANSPORTATION AND TRADE

- The value of domestic trade increased by an average annual rate of four per cent from 1992 to 1998. In 1998, domestic trade totalled \$1,354 billion; 87 per cent of this was intraprovincial and 13 per cent was interprovincial.
- From 1992 to 1998, the value of services traded rose from \$792 billion to \$996 billion, of which 90 per cent was traded intraprovincially.
- By volume, rail accounted for the largest share of domestic trade in 1998, followed by for-hire trucking. But the share of rail and marine from 1992 to 1998 declined, while that of trucking increased. In 1998, 429 million tonnes of traffic were tied to domestic traffic. Of this, 70 per cent of rail and marine activity was tied to the movement of primary goods and materials, while the same share in trucking was tied to manufactured goods and fabricated materials.
- By tonnage, for-hire trucking and rail filled the freight transport demand related to intraprovincial trade.
- A limited number of two-way trade route flows — Quebec–Ontario, Ontario–Alberta, Ontario–British Columbia, Ontario–Manitoba/Saskatchewan — accounted for over two thirds of total interprovincial trade.
- Between 1992 and 1998, Canada's exports and imports grew at an average annual rate of 11.9 and 10.9 per cent, respectively. This trade was dominated by goods (between 82 and 84 per cent of Canada's international trade).
- Trucking dominated Canada's trade with the US in 1998, accounting for 63 per cent of exports and 80 per cent of imports. Pipeline was third for exports while air was second for imports.
- The share of daily Canada–US border crossing by trucks of Canadian firms increased from 57 to 66 per cent between 1991 and 1998. Canadian-based for-hire trucking carriers have been shipping goods over greater distances in the Canada–US market.
- In 1998, Canada's trade with non-US countries fell, because of recessions and financial crises in Asian and Latin American economies. Marine and air are the primary modes used in trade with non-US countries. Air's share of this trade grew from 16 to 19 per cent in exports and from 15 to 22 per cent in imports between 1992 and 1998.

## TRANSPORTATION AND TOURISM

- Travel within, to and from Canada increased in 1999 as the Canadian dollar appreciated slightly and the Canadian economy performed really well. The number of visitors from the US to Canada increased, as did the number of overseas visitors.
- Of the \$47.1 billion of tourism spending in Canada in 1998, 39 per cent was on transportation; 70 per cent of this was by Canadians, a share that has been declining in the 1990s.
- Tourism expenditures on transportation were \$18.5 billion in 1998. Of this, 57 per cent was on air, 35 per cent on motor vehicle transportation, three per cent on intercity bus, and one per cent on rail transportation. The remaining four per cent went to other transportation spending.
- The automobile maintained its dominance as the most common means of transportation in Canada, accounting for 91.8 per cent of all trips taken in 1998 and also increasing its share for overnight business travel. For Canada–US travel, automobile trips were the most significant part of same-day travel; they were less dominant for overnight travel but still the most important mode of transportation.
- Canadians spent a total of \$16.7 billion outside the country in 1999 while foreign travellers spent \$14.9 billion in Canada, 5.1 and 6.7 per cent increases, respectively. In 1999, Canadians only marginally increased their trips overseas, virtually all via air transportation.

## TRANSPORTATION INFRASTRUCTURE

- In 1999, Canadian railways operated slightly less than 50,000 kilometres of track, with CN reducing its network by over eight per cent and CPR by 1.6 per cent. In contrast, the Canadian regional and shortline railway network grew by over 12 per cent, representing at year-end 30 per cent of the country's rail network. This was the third consecutive year of decline in the amount of track discontinued.
- Alberta dominated rail rationalization activities in 1999 with 993 route kilometres transferred and 110 abandoned.
- On the National Highway System, traffic increased almost nine per cent between 1993 and 1996, and almost 40 per cent over 1986. Ontario and Quebec accounted for over 60 per cent of the total vehicle-kilometres on the National Highway System, with 36 per cent for Ontario and 25 per cent for Quebec. British Columbia was the with 14 per cent of the total, followed by Alberta with nearly 11 per cent, Saskatchewan with four per cent, Nova Scotia with slightly more than three per cent, New Brunswick with about three per cent, Manitoba with nearly three per cent, and Newfoundland and Prince Edward Island with two per cent together.
- Toronto and Montreal are two of the busiest traffic centres in Canada. Traffic levels exceed 400,000 vehicles per day on some sections of Highway 401 passing through Toronto, and exceed 150,000 vehicles per day on some sections of Highway 40 in the Montreal core.
- In 1998, almost 90 per cent of total Canada-US truck movements passed through 20 border crossing sites. The busiest border crossings are in Ontario: Ambassador Bridge, Peace River Bridge, Blue Water Bridge and Queenston Bridge.
- By the end of 1999, 17 of the 18 ports designated to become Canada Port Authorities had received their CPA status and had established their boards of directors. In addition, Transport Canada had divested 357 public ports since 1996, leaving 192 regional, local and remote ports under federal control. A total of 1,070 fishing harbours were still under the inventory of the Department of Fisheries and Oceans, which had divested a total of 846 recreational harbours since 1995.
- The year 1999 was the first year of management by the St. Lawrence Seaway Management Corporation.
- Traffic along the Seaway in 1998 was estimated at \$7.5 billion, up 4.4 per cent from 1997. The increase came from the Montreal-Lake Ontario section of the Seaway, as the Welland Canal section saw a decrease. Volume in 1999 was about 47.6 million tonnes, seven per cent lower than in 1998.
- Pilotage authorities reported positive net income in 1999.
- NAV Canada closed its North Bay tower in March 1999. It made investments in technology of over \$100 million in 1999/2000.
- Increases to NAV Canada's user fees, scheduled for November 1, 1998, were deferred to March 1, 1999. Then in September 1999, NAV Canada introduced service charge reductions.
- The airports in Saskatoon, Regina, Charlottetown and Saint John were transferred to not-for-profit authorities in 1999, and Halifax in early 2000, leaving only four National Airport System airports under Transport Canada management.

## STRUCTURE OF THE TRANSPORTATION INDUSTRY

- Since the late 1980s, over 40 shortline rail carriers have formed, operating more than 9,600 kilometres of track and generating aggregate annual revenues of almost \$140 million.
- In 1999, the makeup of the Canadian shortline industry changed when Rail America Inc. purchased both RailLink and RailTex, increasing its ownership to nine operations in Canada. Four of the five major corporations operating shortline railways in Canada are US-owned.
- On December 20, 1999, Canadian National Railway Company and Burlington Northern Santa Fe Corporation announced the decision of their boards of directors to approve a definitive agreement to combine their businesses.
- In 1999, Mullen Transportation, Contrans Corporation, H&R Transport Limited and Trimac Transportation were among trucking firms acquiring interest in other trucking firms. Acquisitions were either of other Canadian-based carriers or of US-based ones.
- Almost 60 per cent of for-hire trucking revenues in 1998 were generated by general freight carriers. Extra-provincial activities accounted for 75 per cent of for-hire trucking revenues.
- The courier industry is concentrated, with 80 per cent of all courier traffic and revenues generated by nine carriers.
- Bankruptcies in trucking were up in 1999.
- The bus industry was a \$5.9 billion industry in 1998, with \$4.2 billion coming from urban transit, \$1.3 billion from school bus operations and \$473 million from intercity activities.
- In 1999, three container shipping lines, Zim, the China Ocean Shipping Company and Norasia, made Vancouver their first port of call. CN and CPR provided double-stack rail services at this port.
- Maersk Inc. acquired the international liner services of Sea-Land Services Inc. Maersk and Sea-Land decided to stay with New York/New Jersey as their main local centre port on the east coast of North America. The Port of Halifax finished second in the competition for Maersk's east coast business.
- The Transpacific Westbound Rate Agreement (TWRA) and the Asia North America Eastbound Rate Agreement (ANERA), the main shipping conferences on the US transpacific routes, were dissolved in the spring of 1999.
- On the domestic marine transport front, Algoma Central Corporation increased the size of its tanker fleet by purchasing three Canadian-registered tankers of EnerChem Corporation. Canada Steamship Lines took delivery of the CSL *Niagara* in 1999.
- Canada's cruise ship industry continued to grow and diversify in 1999.
- The restructuring of the Canadian airline industry received a lot of attention in 1999. The major phases of this restructuring were the August 13 Order in Council establishing a 90-day facilitating process; the release on October 26 of "A Policy Framework for Airline Restructuring in Canada" detailing the federal government's public policy objectives; and the December 21 announcement allowing the acquisition of Canadian Airlines on the basis of commitments from Air Canada and 853350 Alberta Ltd. made to the Minister of Transport and the Commissioner of Competition.

## FREIGHT TRANSPORTATION

- CN and CPR experienced a drop in output in 1998, while Class II railways experienced an estimated increase of six per cent.
- Rail imports from the US reached 15.4 million tonnes in 1998, an increase of 4.6 per cent, while rail exports to the US reached 56.1 million tonnes, an increase of 5.2 per cent. Half the rail export growth took place in the forest product sector. Increased imports were recorded for chemicals, ores and mine products, and gasoline and fuel.
- In 1998, Class I railways moved 72.1 million tonnes of traffic to Canadian ports for export, compared with only 7.1 million tonnes of goods inland from Canadian ports.
- Grain, fertilizers, ores and mine products, coal, forest products, industrial products and intermodal products made up 97 per cent of rail traffic in Canada in 1999. The first three showed declines from 1998 levels and the other four showed increases.
- The number of tonne-kilometres attributed to for-hire trucking carriers totalled 76.7 billion in the domestic market and 61.4 billion in international markets in 1998. The average annual growth of traffic since 1991 has been seven per cent in the domestic market and 15.1 per cent in international markets. The two major sources of growth in freight truck traffic have been the general freight sector and the food product sector.
- Domestic marine traffic flows, at 48.3 million tonnes in 1998, were 31 per cent less than in 1988. Transborder flows of 100.1 million tonnes in 1998 surpassed, by almost six per cent, the record traffic level reached in 1997, while overseas activities, at 179.5 million tonnes, were down by 4.7 per cent from 1997.
- The most important sources of traffic for domestic marine services in 1998 were iron ore and concentrates (14 million tonnes), pulpwood and chips (12.4 million tonnes), fuel oil (9.7 million tonnes), stone and limestone (9.3 million tonnes) and wheat (nine million tonnes).
- Of transborder marine export traffic, 80 per cent was made up of iron ore, crude petroleum, gypsum, stone and limestone, fuel oil, salt and gasoline. On the import side, the significant commodities, accounting for 78 per cent of the total volume, were coal, iron ore, stone and limestone, fuel oil, other petroleum products, and alumina and bauxite. Major commodities shipped overseas from Canada were coal, iron ore, wheat, containerized freight, woodpulp, sulphur and potash. Key unloadings were made up of alumina/bauxite, containerized freight, iron and steel, fuel oil, iron ore, and gasoline.
- On the export side of Canadian liner trade activities in 1998, non-conference carriers handled 8.2 million tonnes of traffic, compared with 5.4 by conference lines. On the import side, 6.6 million tonnes were handled by non-conference carriers and 4.3 million tonnes by conference lines.
- Air cargo revenues represented 6.6 per cent of Air Canada and Canadian Airlines revenues in 1998. For Canadian air carriers, domestic cargo operations generated 67 per cent of their total cargo operating revenues. A total of 487,583 tonnes of domestic traffic was carried by air in 1998, five per cent less than in 1997.



## PASSENGER TRANSPORTATION

- Rail passenger traffic declined in 1998, for both VIA Rail and Class II railways.
- In 1998, 6.1 million passengers travelled approximately 46 million kilometres on scheduled intercity bus service operations. The average use made of charter buses increased, while the number of passengers using urban transit remained constant.
- In 1999, a total of 16.5 million light vehicles were registered across the country, vehicles used by Canadians to satisfy a significant portion of their travel needs.
- The passenger count from cruise business at the Port of Vancouver was 948,000 in 1999, a 17<sup>th</sup> consecutive year of growth. Halifax also had a good year, with 108,000 passengers. Montreal and Quebec city recorded fewer cruise visitors in 1999.
- Growth in domestic air passenger traffic continued in 1998 but at a lower rate than in 1996 and 1997, reaching 26 million passengers. The year 1998 was the fifth consecutive year of growth in transborder air traffic, totalling 18.7 million passengers. Total traffic of 12.6 million passengers was reported in other international air services, an increase of 5.9 per cent from 1997. Preliminary statistics for 1999 suggest that air traffic continued to increase at a moderate rate in all these sections.

## PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

- Rail freight transport service prices did not change in 1998 but declined by four per cent in the first nine months of 1999.
- Total factor productivity of Class I railways slowed down in 1998.
- The Canadian operations of CN and CPR continued to generate improved financial performance in 1999.
- VIA Rail generated an increase of ten per cent in its operating revenues in 1999. The growth in VIA's operating revenues since 1991 has come mainly from increased prices, 4.8 per cent a year on average. Labour productivity decreased in 1998.
- Total factor productivity in the trucking industry increased by 2.1 per cent a year between 1991 and 1998. The increase of 8.8 per cent in revenues from 1991 to 1998 came from an increased level of activity. In 1998 and 1999, the domestic activities surpassed those in the transborder market.
- The financial performance of the trucking industry improved in 1998.
- The revenues of the intercity bus industry jumped by 12 per cent in 1998, mainly because of an increase in outputs. Productivity gains and moderate factor price increases have allowed unit costs to decline by two per cent a year between 1991 and 1998. An improvement in the industry's operating ratio was achieved again in 1998.
- Between 1991 and 1998, prices of urban transit service operators increased on average by 4.2 per cent a year. In 1997 and 1998, average productivity improved by around 1.8 per cent per year. Users of urban transit services paid 47 per cent of the total cost of the system.
- In air transportation, prices increased by three per cent in 1998, with the largest increases noted in transborder markets.
- In 1998, airline productivity dropped by 6.5 per cent and unit costs increased by five per cent, which explains the deterioration in the profitability of the industry that year. In 1999, major carriers saw their total costs go up, translating into a deterioration of their operating ratios.

*The 1999 annual report presents the state of transportation  
in Canada at the turn of the century*

The *Canada Transportation Act* (1996) requires the Minister of Transport to table a report every year on the state of transportation in Canada. More specifically, Section 52 of the Act mandates that:

“Each year the Minister shall, before the end of May, lay before Parliament a report briefly reviewing the state of transportation in Canada in respect of the preceding year, including:

- (a) the financial viability of each mode of transportation and its contribution to the Canadian economy and the development of the regions;
- (b) the extent to which carriers and modes of transportation were provided resources, facilities and services at public expenses;
- (c) the extent to which carriers and modes of transportation received compensation, indirectly or directly, for the resources, facilities and services that were required to be provided as an imposed public duty; and
- (d) any other transportation matters the Minister considers appropriate.”

This report is the fourth one submitted by the Minister. It gives an overview of transportation in Canada at the turn of the century, using the most current data and information available. The report is not constrained by jurisdictional considerations; instead, its scope is as broad as possible to give a comprehensive overview of transportation in Canada. Although data availability was a limiting factor, the report covers up to and including the year 1999 wherever possible. Where this was not possible, the most current year for which information was available is reported. On any given subject, when nothing more current is available than what was previously reported, the reader

is invited to look at earlier reports on Transport Canada’s Web site at: [www.tc.gc.ca](http://www.tc.gc.ca)

The report is more than a review of major transportation events in Canada in 1999. In a complex and rapidly changing world, events and non-events are sometimes equally important. Events that were considered most likely to influence transportation in the new millennium are addressed more extensively than others are. On the non-event side, everything was done to ensure that transportation services on January 1, 2000, would not be affected by the Millennium Bug. Consequently, from a transportation perspective, Canada’s entry into the new century was an important non-event, as Canadians continued to benefit from a safe and secure transportation system.

As was the case last year, the content of the report is organized not by mode of transportation but according to different aspects of transportation, such as freight and passenger transportation services, as well as economic, safety, energy and environmental dimensions. This is intended to give readers different perspectives on the changes taking place in each mode; it is like looking at the same picture from different angles.

The structure of this report explicitly recognizes that transportation demand in Canada is derived from all other social and economic activities. Consequently, the report starts with a brief overview of the Canadian economy, which gives an understanding of the forces at play during 1999. The chapter on government spending gives a sense of the budgetary attention devoted by governments to the transportation sector. Government spending and revenues alone, however, do not provide a complete picture;

divestiture, commercialization and public-private partnership initiatives of recent years also played a role. Information provided in other chapters of this report helps to complete the picture.

A number of the following chapters deal with a key subject and the modal relationship. They examine transportation from a sustainability perspective and include safety, energy and environment, regional economies, employment, trade and tourism. This year's safety chapter focuses on safety statistics, presenting trends by mode of transportation. Of particular interest in the energy and environment chapter is a summary of the work of the Transportation Climate Change Table and its analysis of options to achieve a progressive reduction of greenhouse gas emissions within the transportation sector.

The chapter on regional economies gives an overview of transportation by regions. Due to a lack of available data, it was impossible to isolate the Nunavut Territory for this report. The employment chapter presents transportation from an employer's perspective. It covers three specific areas tied to employment: the workforce, i.e. the total number of people with jobs directly tied to transportation; the average salary earned by transportation employees; and the transportation sector's labour relations.

This is followed by two chapters on the role transportation plays in two activities significant to the country's economic growth and Canadians' standard of living: trade and tourism. The trade chapter puts a special emphasis on freight-related activities, both in terms of flows and modal distribution, while the tourism chapter takes a broad approach that includes all passenger transportation activities tied to leisure, business and other purposes.

The next five chapters examine specific elements of the Canadian transportation system. The chapter on infrastructure gives an overview of the country's overall transportation infrastructure, without which transportation services could not be offered. The focus of the road section of this chapter is on the National Highway System and recent traffic trends, as nothing more current than was presented in earlier reports was available on Canada's overall road network. Incidental services important to the safety and security of the transportation system, such as the air navigation system and marine pilotage services, are also addressed in this chapter. The next three chapters examine transport service industries from different perspectives: industry structure, freight transportation and passenger transportation. A final chapter looks at price, productivity and financial performance of transportation sectors.

The data and information sources used for this report are mostly external to Transport Canada. The validation of the information rests first and foremost within the organizations that produce and generate the information used. Nevertheless, in the production of this report, as in previous years, special attention was devoted not only to data quality, but also to data limitations. Numerous footnotes throughout the report indicate where these limitations constrained the analyses. As much as possible, when current timely data was not available, it was not estimated. It is also important to note that this report analyses the most current state of the country's transportation system — it does not try to predict what may be ahead in coming years.

# TRANSPORTATION AND THE CANADIAN ECONOMY

# 2

*Transportation can be examined as an economic sector  
whose activities contribute to the performance of the economy as a whole.  
In 1999, Canada experienced vigorous economic growth.*

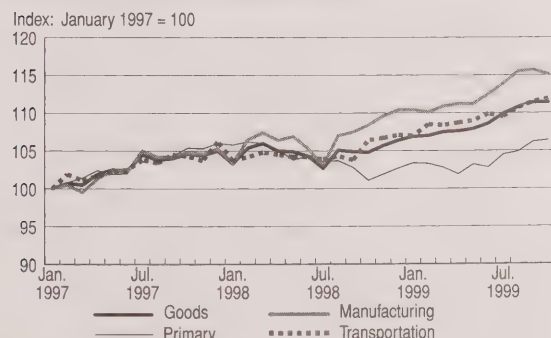
A review of the state of transportation in Canada begins with an understanding of the factors that have affected the level of demand for transportation services during the year. Since transportation derives its demand from all other economic activities, a quick overview of the performance of the Canadian economy and that of a few of its key trading partners, helps give an understanding of the influences on transportation during 1999.

## THE CANADIAN ECONOMY IN 1999

In 1999, Canada experienced vigorous economic growth. Real Gross Domestic Product (GDP) rose four per cent, surpassing the performance of 1998. The continuing strength of the US economy generated demand for Canadian goods and services.

Figure 2-1 compares transportation's real GDP with that of other sectors.

**FIGURE 2-1: REAL GDP BY MAJOR SECTORS**



Source: Statistics Canada, Cat. 15-001

The strength of the economy was based on an 9.3 per cent increase (in real terms) in investment spending. Spending on machinery and equipment was particularly strong, increasing by 14.9 per cent, compared with 9.5 per cent in 1998. Y2K-related computer purchases were responsible for a large part of the increased investment spending. Consumer spending remained firm, growing by 3.2 per cent, up from 2.8 per cent growth the year before. Government spending rose by one per cent, down slightly from 1.7 per cent in 1998.

**TABLE 2-1: GENERAL ECONOMIC INDICATORS**

		Percentage change 1998 - 1999	Annual percentage change 1993 - 1999
<b>GDP at Factor Cost</b> (millions of 1992 dollars)			
Total Economy	750,040	4.0	3.0
Goods	249,548	4.5	3.4
Agriculture	13,562	5.9	3.6
Forestry	4,554	7.5	0.5
Mining	26,721	(2.8)	1.3
Manufacturing	136,867	6.2	4.7
Construction	41,754	3.8	2.5
Services	500,492	3.8	2.9
Retail Trade	46,545	3.9	3.7
Transportation	30,598	5.1	3.9
<b>Merchandise Trade</b> (millions of dollars)			
Exports	360,598	11.9	9.6
Imports	326,662	7.7	9.5
<b>Income</b> (dollars)			
Personal Disposable Income per capita	18,716	2.6	1.9
<b>Canadian Dollar</b> (U.S. cents per unit)			
	67.3	(0.2)	(1.7)
<b>Prices</b> (1992 = 100)			
Total Economy	110.5	1.7	1.2
Consumer Price Index			
All Items	110.6	1.7	1.6
Transportation	124.5	3.3	2.9

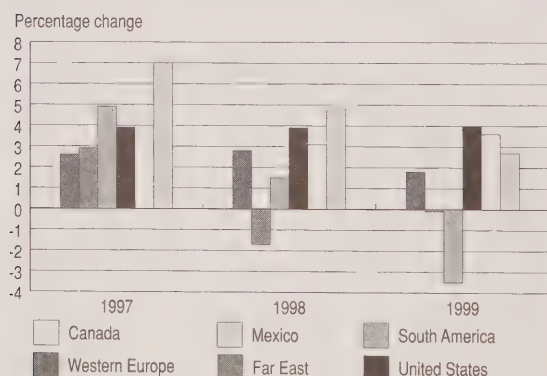
Source: Statistics Canada, Cat. 11-010, 13-001, 15-001, 62-010; Bank of Canada



As shown in Table 2-1, production in the manufacturing sector rose by 6.2 per cent in real terms in 1999, fuelled by investment activity and consumption in Canada and the US. Both the motor vehicle equipment industry and the office machinery (e.g. computers) sectors experienced strong growth. Production in the primary goods industries dropped, as mining activity fell by 2.8 per cent. However, both agriculture and forestry activity increased. Construction activity increased by 3.8 per cent in 1999, after a flat year in 1998. Retail trade had a good year, with a 3.9 per cent increase. Transportation activity rose 5.1 per cent, a pace faster than the economy as a whole.

The US economy has been very strong in recent years and recorded real growth of 4.1 per cent in 1999. Consequently, merchandise export sales to the US were up 14.9 per cent in 1999 in current dollars. Mexico, Canada's other NAFTA partner, also benefited from the strong US economy, and its real GDP grew by 2.7 per cent in 1999. Canada's other trading partners have not demonstrated the same degree of strength. Western Europe had growth of 1.9 per cent and Canadian merchandise exports to that market rose by only 1.8 per cent. While the 1998 Asian financial crisis has been reversed, that region as a whole still recorded negative or negligible growth in 1999. Japan, the world's second largest economy, has not yet recovered completely from its recession, and real output there fell by 1.4 per cent in 1999. Consequently, Canada's merchandise exports to Japan fell by 3.2 per cent. South America continued to feel the effects of the Asian crisis, and real GDP fell 3.5 per cent in 1999 for the region. Figure 2-2 compares Canada's real GDP with that of other regions.

FIGURE 2-2: REAL GDP IN CANADA AND OTHER REGIONS

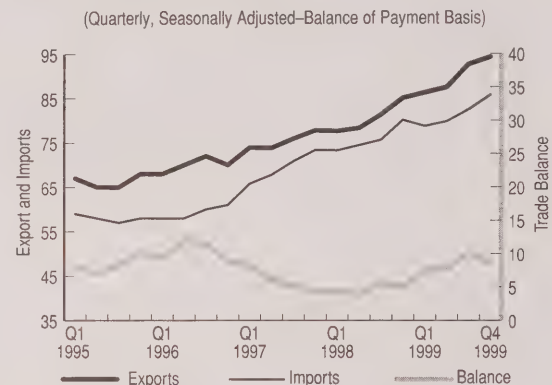


Source: Statistics Canada, Cat. 15-001, 11-010; U.S. Dept. of Commerce; IMF; Standard & Poor's DRI

As shown in Figure 2-3, Canadian merchandise exports grew 11.7 per cent overall in 1999, totalling \$360.6 billion.

As the Canadian economy improved, Canadians bought more goods from abroad. Imports grew by 7.1 per cent to \$325 billion, leaving a merchandise trade surplus of \$34 billion, compared with \$18.9 billion in 1998. Canada's trade surplus with the US rose to \$55 billion.

FIGURE 2-3: MERCHANDISE TRADE



Source: Statistics Canada, Cat. 65-001

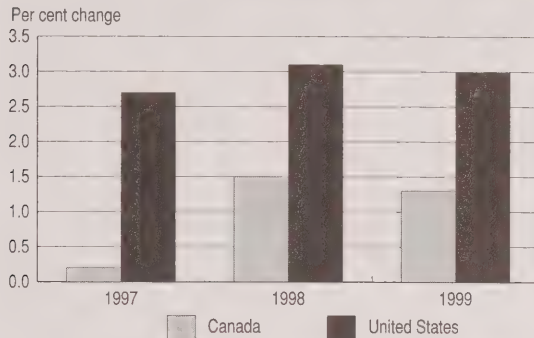
Automotive product exports increased by 26.4 per cent in 1999 and accounted for close to 27 per cent of Canada's exports. Other export sectors that showed large increases were energy (26.8 per cent), forestry (11 per cent) and machinery and equipment (eight per cent). In terms of imports, machinery and equipment accounted for 33 per cent. Automotive product imports rose by 13.7 per cent.

The Canadian dollar has risen from its low of US \$0.6831 in August of 1998. As the Asian financial crisis diminished, commodity prices rebounded and exports grew. Prices went up, in general, by 1.7 per cent in 1999. Consumer transportation prices increased by 3.3 per cent, reflecting increases in energy prices.

Incomes have started to rise in Canada, reflecting the strengthening economy and the improved government fiscal position. As shown in Figure 2-4, real disposable income per capita rose 1.3 per cent in 1999. This is small by comparison with the increases in recent years in the US, but is still a significant improvement when compared with its relative stability during the past decade in Canada.

The strengthening of the Canadian dollar and the improvement in Canadians' income has resulted in increased international overnight travel to both the US (up 5.1 per cent) and overseas (up 0.8 per cent) in 1999. Domestic travel by Canadians also increased.

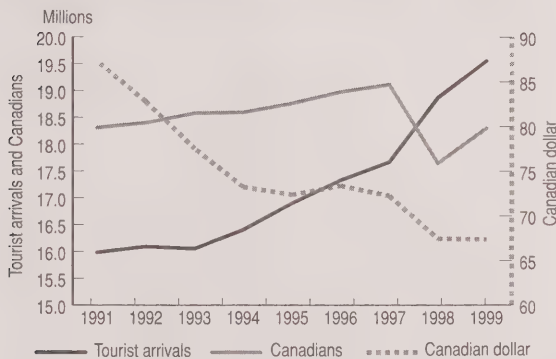
FIGURE 2-4: REAL PERSONAL DISPOSABLE INCOME PER CAPITA



Source: Statistics Canada, Cat. 13-001; US Department of Commerce

Figure 2-5 shows the amount of international overnight travel to Canada between 1991 and 1999.

FIGURE 2-5: INTERNATIONAL OVERNIGHT TRAVEL, 1991 – 1999



Source: Statistics Canada, International Travel Survey, Special Compilations; Bank of Canada

The number of foreign residents visiting Canada increased by 3.6 per cent in 1999, as the number of overnight visits to Canada increased from both American and overseas visitors. A combination of favourable exchange rates for the Canadian dollar and improved US incomes has brought large numbers of US visitors to Canada. As well, the improvement in the Asian region's economy has meant a return of tourists from that region.

## OVERVIEW OF PROVINCIAL ECONOMIC PERFORMANCE

Newfoundland's economy experienced strong growth, fuelled by the offshore oil industry, the manufacturing sector, a rejuvenated fishing industry and tourism. Strong tourism, manufacturing and construction sectors were the

driving forces behind Prince Edward Island's economy, while Nova Scotia's has been driven by wholesale sales, strong manufacturing activity and the development of the Sable Offshore Energy Project. Investment and tourism fuelled New Brunswick's growth. The Quebec economy outpaced the national average, with investment spending and housing being the main drivers. Indicators of economic activity all showed strong economic growth in Ontario, while agricultural output and mining problems eliminated any growth in Manitoba. Construction of the Alliance Pipeline Project in Saskatchewan partially offset a poor performance in the mining sector. High commodity prices energized Alberta's economy. British Columbia pursued its recovery with exports driven by the low Canadian dollar and rising commodity prices.

## CANADA'S POPULATION AND TRANSPORTATION

A country's transportation needs, and the ways in which they change, are influenced by three population characteristics: geographical distribution, age group and urban/rural distribution.

### GEOGRAPHICAL DISTRIBUTION

In 1999, there were 30.6 million people living in Canada. This population was concentrated (62 per cent) in central Canada (Ontario and Quebec). Alberta and British Columbia together made up another 23 per cent. Of the remaining 15 per cent, eight per cent lived in the Atlantic Provinces and seven per cent in Manitoba and Saskatchewan. Table 2-2 shows the breakdown of Canada's population by province/territory and by age.

TABLE 2-2: POPULATION BY PROVINCE/TERRITORY AND AGE

	Population (000s) 1999	Per cent of Total	Average Growth (%) 1989-1999	Per cent by Age Group (1998)	
				32-53	65+
Canada	30,568	100.0	1.1	34.6	12.3
Newfoundland	541	1.8	(0.6)	35.1	11.4
Prince Edward Island	138	0.5	0.6	32.6	13.0
Nova Scotia	941	3.1	0.4	34.5	13.2
New Brunswick	755	2.5	0.3	34.6	12.9
Quebec	7,363	24.1	0.6	35.7	12.4
Ontario	11,561	37.8	1.4	34.4	12.4
Manitoba	1,143	3.7	0.4	32.2	13.6
Saskatchewan	1,028	3.4	0.1	30.6	14.6
Alberta	2,969	9.7	1.8	34.5	9.9
British Columbia	4,029	13.2	2.3	35.0	12.7
Yukon	31	0.1	1.2	40.4	4.9
Northwest Territories	69	0.2	1.9	31.0	3.3

Source: Statistics Canada, Cat. 91-213

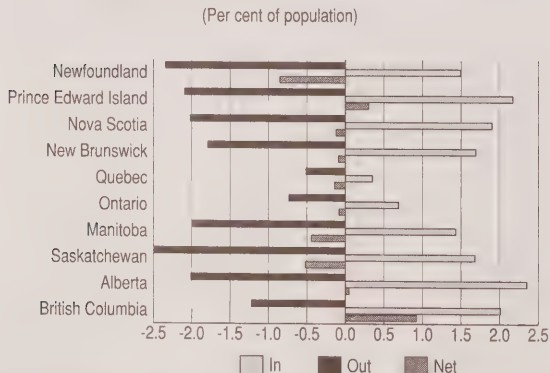
Canada, in common with most developed nations, has seen declines in both death and birth rates for several years now. This has resulted in a declining natural rate of population increase, which means that Canada now needs increasing immigration levels to maintain its population growth. From 1989 to 1998, the Canadian population grew by 1.82 million from net immigration and 1.76 million from more births than deaths. The natural yearly population increase has fallen from 201,696 in 1989 to 122,900 in 1998.

Canada's population, as a whole, has been growing at an average rate of 1.1 per cent per year for the past ten years. Ontario, Alberta and British Columbia have had the highest population growth. Newfoundland has seen negative growth, and Saskatchewan's levels have not changed. The other provinces have averaged growth rates of less than one per cent.

Immigration is important for Quebec, Ontario and British Columbia, while interprovincial migration is a significant factor for all provinces. Such migration has an effect on provincial population changes. It also leads to subsequent travel needs for visiting friends and relatives.

Figure 2-6 shows the inflow, outflow and net flow of interprovincial migration as a per cent of total provincial/territorial population. The total number of interprovincial migrants averages about 300,000 a year, or about one per cent of the total Canadian population. From 1989 to 1998, only Prince Edward Island, Alberta and British Columbia had a positive inflow of interprovincial migrants. Over the same period, Newfoundland and Saskatchewan had average net outflows of migrants that were, on average, over two per cent of each of these provinces' population. Ontario is the origin and destination of nearly half the

FIGURE 2-6: AVERAGE ANNUAL RATES OF INTERPROVINCIAL MIGRATION, 1989 – 1998



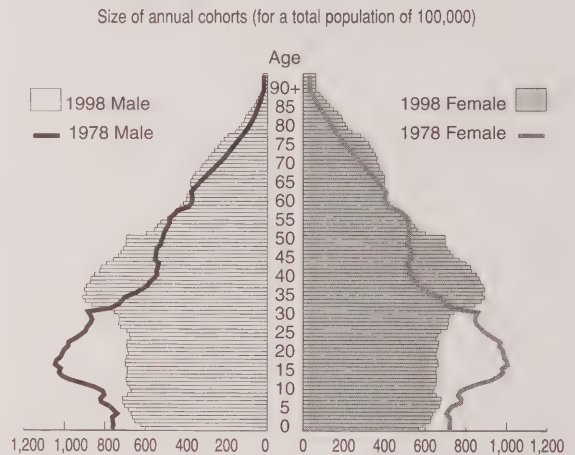
Source: Statistics Canada, Cat. 91-213

interprovincial migrants in Canada. Young adults are most likely to move as they enter the workforce. The out-migration rate was 2.4 per cent for people aged 20 to 24 years and 1.9 per cent for those aged 25 to 34 years.

## AGE GROUP

Lower birth rates and longer life expectancies explain, in part, the ageing of the Canadian population. Figure 2-7 shows a general upward shift in the age distribution. The median age of Canadians rose from 28.2 in 1978 to 36.0 in 1998. Over the same period, the proportion of young people fell from 24 per cent to 19.8 per cent and the proportion of older people rose from nine per cent to 12.3 per cent.

FIGURE 2-7: AGE PYRAMID OF THE CANADIAN POPULATION, 1978 and 1998



Source: Statistics Canada, Cat. 91-213

Following World War II, between 1946 and 1965, almost ten million Canadians were born. These people, aged between 32 and 53 in 1998, correspond to what is referred to as the baby boom generation. In 1998, the members of this group accounted for 35 per cent of the Canadian population, up from only 25 per cent in 1978. As they grow older, they have an effect on all aspects of Canadian life, including transportation.

The age structure varies across Canada. Alberta and the territories have the lowest proportion of seniors, while Saskatchewan has the highest. The provinces where the baby boomers are most dominant are Newfoundland, Quebec, British Columbia and the Yukon Territory. (See Table 2-2.)



Table 2-3 shows the distribution of travel, both domestic and international, taken by Canadians by age group in 1998. It shows that most trips are taken by those between 25 and 64 years of age.

**TABLE 2-3: CANADIAN TRAVELLERS BY AGE GROUP, 1998**

Age Group	(Per cent of total trips)		International	
	Domestic		to US	Other
	Same Day	Overnight	(overnight)	Countries
Total	100.0	100.0	100.0	100.0
Under 15	14.6	16.4	8.2	4.8
15-24	11.6	14.3	6.7	7.0
25-34	16.2	17.5	12.6	14.7
35-44	21.4	19.5	19.1	18.7
45-54	16.5	15.4	23.0	23.3
55-64	10.8	9.1	16.5	17.8
65+	8.8	7.9	13.9	13.8

Source: Statistics Canada, International Travel Survey and Domestic Travel Survey

In the past decade, there has been a noticeable increase in overseas travel by seniors. From 1990 to 1998, the number of overseas trips taken by seniors grew 78 per cent, compared with a 34 per cent increase in trips made by all age groups. The number of trips taken by seniors is expected to increase as the proportion of seniors in the Canadian population increases.

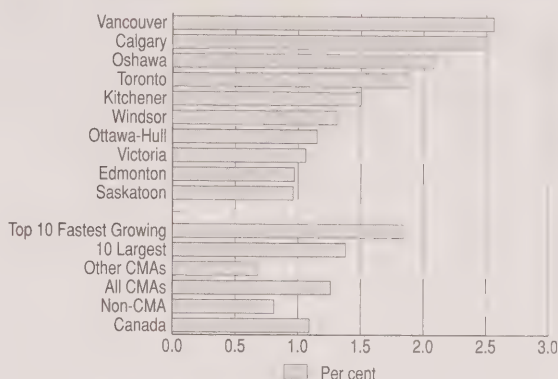
Members of the baby boom generation dominate both domestic and international travel. They account for the highest number of trips of all types except for domestic overnight trips, which is greater for the 25 to 34 age group. It is estimated that boomers and their children account for half of all domestic trips. During the 1990s, only seniors and the 45 to 54 age group, which contained the first wave of the baby boom generation, increased their number of overnight trips to the US.

## URBANIZATION

The 1996 Census confirmed that Canada is now very much an urban nation, with 78 per cent of the population living in centres of 1,000 or more people. This level of urbanization has risen only slightly from 1976, when it was 76 per cent. However, the proportion of the population living in large metropolitan areas or Census Metropolitan Areas<sup>1</sup> has grown from 57 per cent to 62 per cent over the same period.

The tendency toward population concentration in large urban areas is evident from Figure 2-8. From 1991 to 1999, the ten fastest growing Census Metropolitan Areas grew at an average of 1.8 per cent a year, compared with

**FIGURE 2-8: AVERAGE ANNUAL CMA GROWTH RATES, 1991 - 1999**



CMA = Census Metropolitan Areas

Source: Statistics Canada

1.1 per cent for all of Canada and 0.8 per cent for the population not living in large urban areas.

Population concentration is greatest in the two largest metropolitan area regions: the Lower Mainland in British Columbia and the Golden Horseshoe area of southern Ontario. These regions made up seven per cent and 21.3 per cent, respectively, of the Canadian population in 1996.

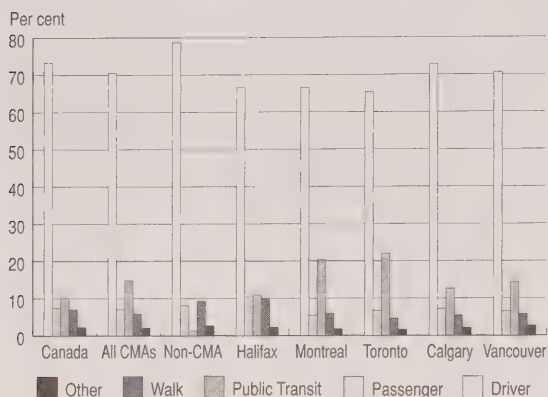
The growth of large urban areas means that transportation systems must be in place both to allow goods and people to move around, and to allow people to travel between them and the other regions of the country.

Getting to work in large urban areas presents a special challenge. The extensive use of automobiles in concentrated areas causes problems of congestion and environmental impact, which are of particular concern. As Figure 2-9 shows, an automobile driven by one person is the most common means of transportation used by Canadians to get to work, no matter where they live. Seventy-three per cent of Canadians drive their own vehicles to work. This proportion is lower for those living in a Census Metropolitan Area (71 per cent) and lowest for those living in the Toronto area (65 per cent). Nearly seven per cent of working Canadians were "passengers." Public transit is used mostly in the large centres. Fifteen per cent of people living in Census Metropolitan Areas used public transit, and the usage rises only in the very large centres such as Toronto and Montreal, where 22 and 20 per cent of workers, respectively, used it to get to work in 1996. Seven per cent walked to work, while about two per cent used other means such as bicycle, motorcycle or taxi.

1 Census Metropolitan Areas are large urban areas with a population of at least 100,000 people.



FIGURE 2-9: MODE OF TRANSPORTATION TO WORK

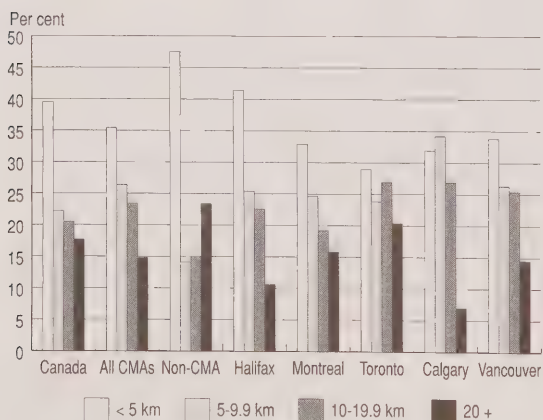


CMA = Census Metropolitan Areas

Source: Statistics Canada, 1996 Census

The median distance that Canadians travelled to get to work was seven kilometres in 1996. People living in the largest centres travel the farthest, as the median commuting distance was 9.3 kilometres in Toronto and 8.2 kilometres in Montreal. As Figure 2-10 shows, in general there is a negative relation between where people live and how far they travel to work. Close to 40 per cent of Canadians live within five kilometres of their workplace. In large centres, this percentage is about 35 per cent. Nearly half of workers living outside of large centres live within five kilometres of their workplace, but almost one quarter of them live over 20 kilometres away.

FIGURE 2-10: COMMUTING DISTANCE TO WORK



CMA = Census Metropolitan Areas

Source: Statistics Canada, 1996 Census

## CONTRIBUTION OF TRANSPORTATION TO THE ECONOMY

Transportation can also be examined as an economic sector whose activities contribute to the performance of the economy as a whole. To measure transportation's relative contribution to the overall economy, however, the derived nature of its demand must be put aside.

The relative contribution of transportation to the economy can be assessed from a number of perspectives, including commercial (for-hire) activities and the demand for transportation services. For commercial transportation activities, the focus is on transportation firms that provide transportation services for moving either passengers or freight for a fee (e.g. airlines, railways, shipping lines and trucking firms). This has the disadvantage of not bringing together all transportation activities, as it excludes those internal to firms and for which there are no observable prices. When looked at in terms of transportation demand, the focus is on capturing all transportation-related expenditures, whether goods (e.g. transportation equipment) or services that allow for the movement of people and goods/freight. This includes all purchases related to transportation by households, private business and government.

## COMMERCIAL TRANSPORTATION

The importance of commercial transportation, or transportation industries, can be assessed through value-added and employment measures. Employment is addressed in Chapter 7 of this report. Value-added can be defined as a firm's total sales minus the purchases of inputs from other firms. In other words, value-added is what is available within a firm for the wages of its employees and the profits of its owners. It is an economic measure commonly used to assess an industry's relative importance to the economy. Its use avoids double counting; however, the travelling public and shippers do not purchase only the "value-added" by commercial transportation firms. Its application to transportation is equivalent to a rough equivalent of the supply of commercial transportation services.

In 1999, transportation industries accounted for 4.1 per cent of GDP. At 1.7 per cent, trucking accounted for the largest proportion of this, while at 0.3 per cent, the domestic marine industry accounted for the smallest proportion. In 1999, transportation industries continued to grow faster than the economy, as they have consistently

over the last five years. In 1999, this growth was dominated by the freight transportation activities of trucking and rail. The continued strong growth in trucking was driven by trade expansion and the forces driving regional economic growth across the country. The growth in rail activity picked up in 1999, benefiting from the recovery in world commodity prices. Passenger transportation activities grew marginally in 1999, with all modal passenger activities (air, urban transit, rail) growing more slowly than the GDP. Industries supporting the transportation sector (e.g. freight forwarders) posted a net decline. Table 2-4 gives the breakdown of commercial transportation as a percentage of GDP.

TABLE 2-4: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GDP AT FACTOR COST

Industries	(Millions of real 1992 dollars) Value-added, 1999	Per cent of GDP	Per cent Annual Growth, 1994-1999	Per cent Annual Growth, 1998-1999
Air	4,304	0.6	5.2	1.8
Rail	4,516	0.6	1.0	7.1
Marine	2,396	0.3	2.8	4.8
Truck	12,478	1.7	7.7	8.2
Public Passenger Transit <sup>1</sup>	3,333	0.4	0.5	1.8
Other Transport <sup>2</sup>	3,571	0.5	(1.0)	(0.2)
Transportation Industries	30,598	4.1	3.9	5.1
Total GDP	750,040	100.0	3.0	4.0

1 Public passenger transit refers primarily to urban transit, interurban bus, and taxi's.  
2 Other transport refers primarily to freight forwarders and other supporting industries.

Source: Statistics Canada, Gross Domestic Product by Industry, Cat. 15-001-XPB.

## TRANSPORTATION DEMAND

Transportation demand measures all transportation-related expenditures by households, businesses and governments on transportation goods (e.g. equipment) and services used in the movement of people and freight. It can be measured by the final demand method of calculating GDP (i.e. by the final demand for all goods and services in the economy). Final demand consists of the sum of personal expenditures, investment, government spending and the trade balance (exports minus imports).

As can be seen from Table 2-4, transportation demand represents a much larger share of the economy than that of commercial transportation activities in the GDP.<sup>2</sup> In 1999, transportation demand accounted for 13.2 per cent of GDP. The difference in these two approaches is a result of two factors: first, transportation demand is not limited to commercial activities; and second, transportation demand consists primarily of expenditures on transportation

equipment (e.g. cars and trucks) and associated infrastructure (e.g. roads). It is the actual sums spent on these capital assets that is captured by this approach. Transportation equipment is the leading expenditure item in the sectors of exports, imports, personal expenditures and business investment. The amount spent on such capital assets is not indicative of the level of activity, however. In the government sector, the vast majority of transportation investment and spending is on roads. More detailed breakdowns of both personal expenditures and investment are provided in Appendices 2-1 and 2-2, while government expenditures are discussed in more detail in Chapter 3.

TABLE 2-5: TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT

Industries	(Millions of 1992 dollars) Expenditures 1999	Per cent of GDP	Per cent Annual Growth 1998-1999	Per cent Annual Growth 1994-1999
<b>1) Personal Expenditures on Transportation</b>	<b>70,101</b>	<b>8.0</b>	<b>3.9</b>	<b>3.9</b>
New and Used				
Transportation Equipment	29,042	3.3	6.0	7.2
Repair and Maintenance Expenditures	9,849	1.1	0.9	0.1
Transportation Fuels and Lubricants	14,782	1.7	2.3	1.8
Other Services Related to				
Transportation Equipment	6,516	0.7	2.9	1.6
Purchased Commercial Transportation	9,912	1.1	4.0	4.4
<b>2) Investment in Transportation</b>	<b>24,853</b>	<b>2.8</b>	<b>17.2</b>	<b>7.5</b>
Business Investment in Transportation	19,214	2.2	23.3	11.1
Transportation Infrastructure (roads and railways)	1,162	0.1	(0.6)	1.6
Transportation Equipment	15,157	1.7	14.3	7.6
Inventories	2,895	0.3	152.4	(266.4)
Government Investment in Transportation	5,639	0.6	0.1	(1.1)
Transportation Infrastructure (roads)	5,059	0.6	0.1	(1.5)
Transportation Equipment	580	0.1	0.9	2.2
<b>3) Government Spending on Transportation</b>	<b>9,941</b>	<b>1.1</b>	<b>1.3</b>	<b>0.2</b>
Infrastructure Maintenance (roads)	5,241	0.6	1.3	0.2
Urban Transit Subsidies	2,318	0.3	1.3	0.2
Other Spending	2,382	0.3	1.3	0.2
<b>4) Exports</b>	<b>81,571</b>	<b>9.3</b>	<b>21.9</b>	<b>7.2</b>
Transportation Equipment, including parts	74,111	8.5	24.0	7.5
Commercial Transportation	7,460	0.9	4.2	4.1
<b>5) Imports</b>	<b>69,302</b>	<b>7.9</b>	<b>12.3</b>	<b>6.3</b>
Transportation Equipment, including parts	59,827	6.9	13.5	7.3
Commercial Transportation	9,475	1.1	5.1	1.0
<b>Total Transport Related Final Demand (1+2+3+4-5)</b>	<b>117,164</b>	<b>13.4</b>	<b>13.0</b>	<b>5.0</b>
<b>Gross Domestic Product at Final Prices</b>	<b>873,374</b>	<b>100.0</b>	<b>4.2</b>	<b>3.1</b>
<b>Total Transport-Related Domestic Demand (1+2+3)</b>	<b>102,000</b>	<b>12.0</b>	<b>4.8</b>	<b>3.7</b>
<b>Final Domestic Demand</b>	<b>848,278</b>	<b>100.0</b>	<b>3.9</b>	<b>2.9</b>

Source: Statistics Canada, National Income and Expenditure Accounts, 13-001-XPB; unpublished data, Income and Expenditure Accounts Division; Transport Canada estimates

2 It should be noted that transport demand will tend to underestimate the value of commercial transportation, since much of commercial freight transportation is an intermediate service whose cost becomes embedded in the price of other non-transportation demand goods (i.e. shoes, groceries, etc.). This indirect demand for commercial transportation will be addressed in next year's annual report.

Similarly to the value-added approach to commercial transportation activities, transportation demand grew faster in 1999 than the economy as a whole, with growth of 13 per cent, compared with five per cent annual growth over the last five years. This accelerated growth was largely due to increases in exports of, and business investment in, transportation equipment. In contrast, growth in transportation demand coming from personal expenditures and the government sector was below GDP growth, with growth in the government sector consistently behind GDP growth over the last five years.

A slightly different measure of the importance of transportation demand is final domestic demand, a measure

of expenditures by Canadians consisting of personal expenditures, investment and government spending, but excluding foreign trade (exports and imports). This measure generates a somewhat lower estimate of the share of transportation demand, at 12 per cent of 1999 final domestic demand. This is shown in Table 2-4. This lower share is primarily a result of the exclusion of the trade surplus generated by exports of transportation equipment. In 1999, annual growth in transportation demand of 4.8 per cent also exceeded the growth in final domestic demand of 3.9 per cent. This was by a lesser extent than for final demand, again reflecting the exclusion of the high growth in transportation equipment exports in 1999.

## APPENDIX 2-1

### PERSONAL EXPENDITURES ON TRANSPORTATION, 1998

(Millions of 1992 dollars)

<i>Personal Expenditures on Transportation</i>	<i>1998 Value</i>	<i>Per Cent of Total</i>
New automobiles	10,748	15.3
Used motor vehicles (net)	6,364	9.1
New trucks and vans	10,287	14.6
Bicycles and motorcycles	2,022	2.9
Boats, aircraft, and accessories	810	1.2
<b>Transportation Equipment Purchases</b>	<b>30,231</b>	<b>43.0</b>
Motor fuels and lubricants	14,447	20.6
Motor vehicle parts and accessories	4,810	6.8
Motor vehicle maintenance and repairs	4,951	7.0
Driving licences, lessons and tests	2,190	3.1
Motor vehicle renting	540	0.8
Auto insurance	2,875	4.1
<b>Transportation Equipment Operating Expenses</b>	<b>29,813</b>	<b>42.4</b>
Bridge and highway tolls	116	0.2
Parking	609	0.9
<b>Road Infrastructure Use Charges</b>	<b>725</b>	<b>1.0</b>
Urban transit	1,360	1.9
Railway transport	129	0.2
Interurban bus	449	0.6
Air transport	5,885	8.4
Water transport	149	0.2
Taxis	443	0.6
Moving and storage	518	0.7
Commissions paid to tour operators	599	0.9
<b>Commercial Transportation</b>	<b>9,532</b>	<b>13.6</b>
<b>Total Personal Expenditures on Transportation</b>	<b>70,301</b>	<b>100.0</b>

Source: Statistics Canada unpublished data, Income and Expenditure Accounts Division

## APPENDIX 2-2

### TRANSPORTATION INVESTMENT BY INDUSTRY AND GOVERNMENT, 1997

(Millions of current dollars)

<i>Types of Transportation</i>	<i>Transportation Industries</i>	<i>Other Industries</i>	<i>Government</i>	<i>Total</i>	<i>Per Cent of total Investment</i>
Warehouses and Freight Terminals	80	346	0	426	1.5
Grain Elevators and Terminals	80	0	0	80	0.3
Maintenance Garages, Equipment Storage, Workshops	99	395	164	658	2.3
Railway Shops Engine Houses	18	0	0	18	0.1
Aircraft Hangars	1	0	94	95	0.3
Passenger Terminals	343	0	13	356	1.2
<b>1. Transport-Related Building Construction</b>	<b>621</b>	<b>741</b>	<b>271</b>	<b>1,633</b>	<b>5.6</b>
Marine engineering	173	17	264	454	1.6
Highways, Roads, Streets	77	231	4219	4,527	15.5
Airport Runways	107	0	37	144	0.5
Railway track	571	6	5	582	2.0
Bridges	198	14	267	479	1.6
Tunnels	22	1	0	23	0.1
Other Transportation	2	3	0	5	0.0
<b>2. Transport-Related Engineering Construction</b>	<b>1,150</b>	<b>272</b>	<b>4,792</b>	<b>6,214</b>	<b>21.3</b>
Industrial Containers	0	85	0	85	0.3
Automobiles	16	14,224	109	14,349	49.3
Buses	396	33	42	471	1.6
Trucks, Vans, Truck Tractors and Trailers	676	3,015	137	3,828	13.1
All-terrain Vehicles	0	238	2	240	0.8
Locomotives, Rail Rolling Stock, including Subways	788	65	0	853	2.9
Ships and boats	191	216	34	441	1.5
Aircraft and Helicopters	334	620	6	960	3.3
Other Transportation Equipment	1	43	1	45	0.2
<b>3. Transportation Equipment</b>	<b>2,402</b>	<b>18,539</b>	<b>331</b>	<b>21,272</b>	<b>73.1</b>
<b>Total Transport-Related Investment (1 + 2 + 3)</b>	<b>4,173</b>	<b>19,552</b>	<b>5,394</b>	<b>29,119</b>	<b>100.0</b>

Source: Statistics Canada, Capital Expenditures by Type of Asset, 1997, Cat 61-223



# GOVERNMENT SPENDING ON TRANSPORTATION

# 3

*Government spending on transportation has declined over the past five years at the federal and provincial/territorial levels, while it continues to increase on the local scene. However, Transport Canada's shift toward a policy and safety orientation, as well as divestiture and commercialization initiatives, has affected both expenses and revenues.*

## INTRODUCTION

This chapter describes the transportation expenditures and revenues of all three levels of government — federal, provincial/territorial and local. Where possible, expenditures and revenues are subdivided by mode.

The chapter begins by summarizing all transportation expenditures and revenues by levels of government. It then gives a synopsis of federal and provincial revenues from transportation users, followed by a detailed examination of consolidated expenditure by mode. Finally, it presents provincial/territorial and local government transportation expenditures.

## GOVERNMENT TRANSPORTATION EXPENDITURES

This section covers spending on transportation by all levels of government and their agencies. Net expenditures are derived after taking into account the federal government revenues (other than fuel taxes) attributable to transportation users and government transfers received from other levels of government.

Table 3-1 shows that, over the past several years, total government net expenditures on transportation have consistently been in the \$16–17 billion range. While the federal and provincial/territorial levels show no apparent pattern, the local government expenditures show a definite increase. From 1994/95 to 1998/99, net expenditures on transportation by local governments have increased, on average, by almost 2.5 per cent a year. Expenses by the

provinces and territories increased by nine per cent in 1998/99, returning to the levels of the early 1990s.

**TABLE 3-1: GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION**

	(Millions of dollars)					
	1994/95	1995/96	1996/97	1997/98 <sup>4</sup>	1998/99	1999/2000 <sup>5</sup>
Transport Canada						
Expenses (Gross) <sup>1</sup>	2,976	3,448	2,472	2,428	1,415	1,178
Other Federal						
Expenses (Gross)	1,254	1,239	1,011	992	877	771
Transport Canada						
Revenues	1,021	1,211	1,353	987	658	353
Other Federal Revenues	0	15	31	40	42	51
Transport Canada						
Expenses (Net)	1,955	2,237	1,126	1,445	763	826
Other Federal						
Expenses (Net)	1,254	1,224	980	951	835	720
Cost Recovery of Federal						
Expenses (Per cent)	24.1	26.2	39.7	30.0	30.5	20.8
Provincial/Territorial <sup>2</sup>	7,642	7,762	7,141	7,232	7,881	N/A
Local Expenses <sup>3</sup>	5,960	6,333	6,388	6,323	6,571	N/A
Total	16,811	17,555	15,628	15,948	16,045	N/A
Dollars per capita	574	593	522	527	525	N/A

<sup>1</sup> Includes in 1995/96 \$1.1 billion to reduce the value of the CN debt to the Public Accounts of Canada.

<sup>2</sup> Net of federal transfers as reported by the province.

<sup>3</sup> Calendar year basis; net of federal and provincial transfers as reported by local governments

<sup>4</sup> Excludes non-budgetary write-off of \$29 million.

<sup>5</sup> Forecast at January 31, 2000 for full year.

Source: Public Accounts of the Government of Canada; Transport Canada, Finance Directorate; the Canadian Transportation Agency; internal reports from several agencies and federal departments; provincial/territorial departments of transportation; Statistics Canada, Public Institutions Division, unpublished data basis

Over the 1994/95 to 1998/99 period, net federal government expenses on transportation have been halved. Gross expenses by Transport Canada have been reduced by 52 per cent. Revenues dropped by 36 per cent, as a result of the divestiture of some airports and the elimination of the Air Transportation Tax (ATT) and other navigation fees from the federal government books. Prior to the



airports being devolved, total revenues are included, while afterwards, only the lease payments to Transport Canada are shown. Other federal departments and agencies that have transport-related expenses include the Canadian Transportation Agency, the Civil Aviation Tribunal, Fisheries and Oceans Canada, Public Works and Government Services Canada, Heritage Canada (Parks Canada), the National Capital Commission, and Indian and Northern Affairs Canada. The transfers to Agriculture Canada of the adjustment for the elimination of the *Western Grain Transportation Act* (WGTA) subsidy, Treasury Board's infrastructure programs, and Public Works and Government Services Canada's Northumberland Strait Crossing are reflected in total expenditures by other federal agencies and departments. Over the period, gross transport expenses by all federal departments/agencies, other than Transport Canada, have fallen by 30 per cent.

Net expenditures on transportation by all levels of government in 1998/99 increased by \$97 million, or 0.6 per cent, over the previous year's level. Both provincial and local governments showed an increase, while net transport expenses by the federal government fell by 33 per cent. Federal net transport expenses in 1999/2000 are expected to fall by \$48 million, or three per cent.

The reduced share of federal expenditures recovered (20.8 per cent in 1999/2000 compared with 30.5 per cent in 1998/99) is tied to divestitures and commercialization initiatives. Former federal cost recovery responsibilities are now assumed by new entities.

## TOTAL TRANSPORTATION REVENUES BY LEVEL OF GOVERNMENT

The federal government obtains revenues from the use of transportation facilities and services. Revenues from cost recovery are credited to a federal department's budget, while other revenues are credited to the government's Consolidated Revenue Fund. Both are included in this analysis. Excise fuel taxes collected by the federal and provincial governments, as well as provincial licence and other fees, constitute tax revenues collected from transport users. They are reported in Table 3-2.

In 1999/2000, federal government transport revenues, other than fuel taxes, are forecast to total \$404 million, down from \$700 million in the previous year and \$1.0 billion in 1997/98. Most revenues originate from airport lease revenues, which should reach \$263 million. Marine fees are to bring in an additional \$79 million.

TABLE 3-2: GOVERNMENT REVENUES FROM TRANSPORT USERS

	(Millions of dollars)					
	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000 <sup>1</sup>
<b>Transport Federal Revenues other than Fuel Taxes</b>						
Air Transportation Tax <sup>1</sup>	589	683	737	742	295	0
Airport Revenues	303	368	317	157	263	263
Aircraft Services	16	19	26	30	28	32
Other Air Fees	59	96	197	6	10	12
Marine Revenues <sup>2</sup>	23	18	73	68	73	79
Other Fees and Recoveries <sup>3</sup>	31	27	34	24	30	17
Total Credited	1,021	1,211	1,384	1,027	700	404
<b>Other Government Revenues from Transport Users</b>						
Federal Fuel Taxes	3,820	4,397	4,439	4,625	4,674	N/A
Provincial/Territorial	8,317	8,406	8,598	8,825	9,347	N/A
Fuel Taxes <sup>4</sup>	5,557	5,661	5,741	5,881	6,250	N/A
Licence Fees	2,760	2,745	2,857	2,944	3,097	N/A
Total Other Government Revenues	12,137	12,803	13,037	13,450	14,021	N/A

Note: More detail is available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

1 Since 1996/97, the proceeds of the Air transportation Tax have been credited to the Consolidated Revenue Fund.

2 Includes Coast Guard user fees, harbour fees, and sales of marine assets credited to the Consolidated Revenue Fund.

3 Includes and inter- and intra-departmental transfers for services and various regulatory, licensing and administrative fees credited to either Transport Canada and the Consolidated Revenue Fund.

4 The amounts shown exclude estimated provincial/territorial sales tax revenues.

5 Forecast as of January 31, 2000, for full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

The Air Transportation Tax (ATT) has not been credited to Transport Canada since 1996/97, but is included here because its proceeds were subsequently transferred to NAV Canada to finance its operations. The sunseting of the ATT is responsible for the substantial revenue reduction in 1999/2000. Other revenues not credited to Transport Canada, such as those from the leases of hopper cars or the sale of port assets, are also reported in Table 3-2.

In 1998/99, revenues collected from transport users as fuel taxes, and permit and licence fees by the provincial/territorial governments, totalled \$14 billion, an increase of 3.7 per cent over 1997/98. By far the largest component is fuel taxes, averaging 78 per cent of total government annual revenues from transportation from 1994/95 to 1998/99. Over the same period, the annual growth rate of fuel tax revenues and of licence and permit revenues was comparable.

## FEDERAL EXPENSES RELATED TO TRANSPORT FACILITIES AND SERVICES

The federal government provides transportation facilities and services in all modes. As shown in Table 3-3, these include airports, port and harbour operations, modal safety and policy services, and services provided by the Canadian Coast Guard (now part of the Department of Fisheries and

**TABLE 3-3: FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES**

	(Millions of dollars)			
	1996/97	1997/98	1998/99	1999/2000 <sup>a</sup>
Airports	396	186	140	127
Air Navigation Systems	554	0	0	0
Aircraft Services	57	56	64	54
Coast Guard	540	523	471	514
Ports and Harbours <sup>1</sup>	90	85	84	97
Roads and Bridges <sup>2</sup>	175	169	156	148
Air Safety and Policy <sup>3</sup>	111	113	125	135
Marine Safety and Policy <sup>4</sup>	43	65	56	46
Road & Rail Safety and Policy	36	36	40	38
Multimodal Policy and Safety <sup>5</sup>	51	53	95	84
Other Services <sup>6</sup>	24	21	22	21
Other <sup>7</sup>	145	160	117	115
<b>Total</b>	<b>2,223</b>	<b>1,467</b>	<b>1,370</b>	<b>1,379</b>

Note: More detail available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

<sup>1</sup> Includes expenses for small fishing ports by Fisheries and Oceans.

<sup>2</sup> Includes contributions by Transport Canada to Jacques Cartier and Champlain bridges, and expenses by the National Capital Commission, Public Works and Government Services Canada, Parks Canada, and Indian and Northern Affairs Canada.

<sup>3</sup> Includes expenses by the Civil Aviation Tribunal.

<sup>4</sup> Increases in 1997/98 and 1998/99 related to the purchase of a ferry.

<sup>5</sup> Includes expenses for regulation and the inspection of the transport of dangerous goods, and multimodal accident investigation, safety, policy and analysis.

<sup>6</sup> Security and Emergency Preparedness; and Research and Development.

<sup>7</sup> Corporate Services of Transport Canada and Canadian Transportation Agency.

<sup>8</sup> Forecast at January 31, 2000, for full year.

Source: Transport Canada

Oceans). The federal government also performs several multimodal activities, including the investigation of accidents and the regulation and monitoring of the transport of dangerous goods.

Between 1996/97 and 1998/99, direct federal transport expenses fell from \$2.2 billion to \$1.4 billion. The transfer of the operations of the Air Navigation System (ANS) to NAV Canada accounts for 65 per cent of the decline. In 1999/2000, the operating and capital expenses of the federal government in transport are forecast to increase by 0.6 per cent from the 1998/99 levels.

The Canadian Coast Guard now represents the largest single federal transport expense (\$514 million by 1999/2000). The costs of operating federal ports and airports should reach \$224 million by 1999/2000, down from \$489 million in 1996/97. This reflects divestiture initiatives. Expenditure on safety and policy are forecast to reach \$303 million by 1999/2000, up from \$249 million in 1996/97, in accord with Transport Canada's increased orientation to a policy and safety role. Direct expenses on roads are forecast to fall from \$175 million in 1996/97 to \$148 million in 1999/2000.

## FEDERAL SUBSIDIES TO TRANSPORTATION

Total direct federal subsidies, grants and contributions in 1999/2000 are projected to be \$570 million, 38 per cent less than in 1998/99. This major reduction can be explained by the elimination of payments to NAV Canada and by the decline in highway transfers as transition and infrastructure programs are finishing. Since 1995/96, subsidies and transfers have fallen by more than 50 per cent. Subsidies to freight transport and ferry operations were either eliminated or substantially reduced. Highway transfers were also reduced. Table 3-4 gives more detail.

**TABLE 3-4: DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE**

	(Millions of dollars)				
	1995/1996	1996/1997	1997/1998	1998/1999	1999/2000 <sup>a</sup>
<b>Air Mode</b>					
Airport (Operation & Capital)	30.9	35.2	46.2	45.0	45.3
NAV Canada	0.0	291.7	685.8	215.8	0.0
Other	5.0	3.6	13.8	0.5	0.4
<b>Total Air</b>	<b>35.9</b>	<b>330.5</b>	<b>745.9</b>	<b>261.3</b>	<b>45.7</b>
<b>Marine Mode</b>					
Marine Atlantic Ltd.	100.0	97.2	91.3	29.1	28.6
Other Crown Corporations	6.9	2.5	0.7	10.4	1.6
Port Divestiture Fund	0.0	0.9	5.7	6.7	25.5
Other Ferry and Coastal Services	49.8	30.3	31.2	28.8	29.2
Other	14.0	16.8	5.7	4.6	2.8
<b>Total Marine</b>	<b>170.7</b>	<b>147.8</b>	<b>134.6</b>	<b>79.5</b>	<b>87.6</b>
<b>Rail Mode</b>					
Terminated Freight Subsidies <sup>1</sup>	221.7	0.0	0.0	0.0	0.0
Hopper Cars	18.2	17.1	19.0	21.0	21.0
VIA Rail	301.0	235.8	216.2	200.5	170.3
Other Passenger Services	9.7	5.2	6.5	6.5	7.1
Grade Crossings	8.2	7.4	7.5	7.2	7.5
Other	4.4	1.8	1.6	1.8	1.4
<b>Total Rail</b>	<b>563.2</b>	<b>267.3</b>	<b>250.8</b>	<b>236.9</b>	<b>207.3</b>
<b>Highway Modes</b>					
Atlantic Region Freight Assistance Program	35.4	0.0	0.0	0.0	0.0
Transition Programs <sup>2</sup>	48.7	98.5	485.6	93.4	59.8
Highway Agreements	207.7	201.1	152.2	125.9	101.1
Infrastructure Program	193.0	193.2	122.0	71.2	0.0
Fixed Link in P.E.I. <sup>3</sup>	0.0	13.3	52.6	44.3	46.8
Other	12.5	8.3	9.1	9.7	21.2
<b>Total Highway Modes</b>	<b>497.3</b>	<b>514.4</b>	<b>821.5</b>	<b>344.5</b>	<b>228.9</b>
<b>Grand Total<sup>4</sup></b>	<b>1,267.1</b>	<b>1,260.1</b>	<b>1,953.1</b>	<b>922.5</b>	<b>569.6</b>

Note: More detail is available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

<sup>1</sup> WGTA, MFRA and Branch Lines.

<sup>2</sup> Offset federal programs to the elimination of WGTA and ARFA Programs; Labrador ferry service buyout in 1997/98.

<sup>3</sup> Payments made by the Department of Finance, Public Works and Government Services, and Transport Canada.

<sup>4</sup> Includes subsidies not elsewhere classified.

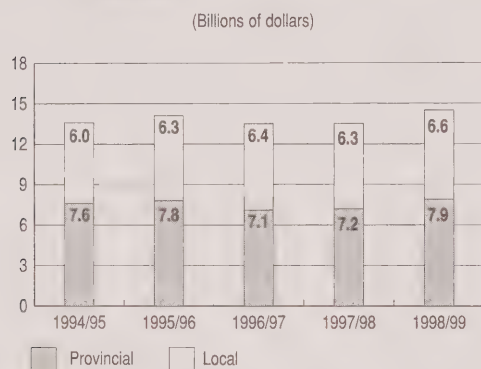
<sup>5</sup> Forecast as at January 31, 2000 for full year.

Source: Main Estimates and Public Accounts of the federal departments concerned

## DISTRIBUTION OF PROVINCIAL/TERRITORIAL AND LOCAL EXPENDITURE BY PROVINCE

In 1998/99, provincial/territorial and local governments' spending on transportation amounted to \$14.5 billion. This was a 6.6 per cent increase from 1997/98 and reversed two consecutive years of decline. The 1998/99 spending levels are higher than in 1995/96. Figure 3-1 illustrates the trends in provincial and local transport expenses from 1994/95 to 1998/99. Table 3-5 also gives more details.

FIGURE 3-1: PROVINCIAL/TERRITORIAL AND LOCAL EXPENSES IN TRANSPORT



Source: Transport Canada

Since 1994/95, transport spending by provincial and local governments has increased by 6.3 per cent. The largest increases were recorded in Prince Edward Island, Saskatchewan and Newfoundland. Expenditures have declined only in Quebec.

Federal transfers are equivalent to 2.7 per cent of transport spending by local and territorial governments. In 1998/99, Newfoundland was the province most dependent on federal transfers, which accounted for more than 24 per cent of its spending on transport. Table 3-6 shows more data on transport expenditure and revenues by mode and level of government.

Spending on roads and highways is the most important category of transport-related expenditure for all provinces, although other modes are equally important for some. The proportion for road and highway spending ranged from almost 100 per cent in Prince Edward Island, to only 44 per cent in the Northwest Territories, which spends more on air transportation (38 per cent) because of its remoteness.

Transit spending is the most substantial in Ontario, where it accounts for 24 per cent of provincial and local transport expenditures. High levels of spending on transit in Ontario reflect the settlement of commitments made prior to services realignment. Expenditures on transit are also significant in Quebec, where this sector represents 18 per cent of the local and provincial transport budgets.

TABLE 3-5: DISTRIBUTION OF PROVINCIAL/TERRITORIAL<sup>a</sup> AND LOCAL<sup>a</sup> EXPENDITURES BY PROVINCE

	Net Expenditure (Millions of dollars)														All Federal Transfers	
	Air, Water and Rail		Provincial roads		Local/urban roads <sup>1</sup>		Transit <sup>2</sup>		Other <sup>3</sup>		Total					
	1994/95	1998/99	1994/95	1998/99	1994/95	1998/99	1994/95	1998/99	1994/95	1998/99	1994/95	1998/99	1994/95	1998/99		
Newfoundland	0	27	106	115	75	79	6	5	0	0	187	226	91	71		
Prince Edward Island	0	0	52	68	7	10	0	0	0	0	59	78	7	9		
Nova Scotia	5	5	210	146	60	124	11	15	3	5	289	296	35	47		
New Brunswick	12	12	306	304	100	99	7	6	0	5	425	426	57	35		
Quebec	49	44	1,006	1,227	1,653	1,432	612	594	121	95	3,441	3,392	36	25		
Ontario	49	16	2,121	1,613	1,623	1,923	883	1,197	100	191	4,776	4,939	63	48		
Manitoba	8	11	222	255	212	213	51	49	9	23	502	552	20	5		
Saskatchewan	4	5	223	242	199	257	14	20	1	12	442	536	9	15		
Alberta	5	2	632	677	676	795	163	200	30	45	1,507	1,718	16	14		
British Columbia	39	25	975	1,075	533	694	252	298	16	26	1,815	2,119	3	14		
Northwest Territories	33	43	46	32	10	9	1	1	0	9	89	94	5	1		
Yukon	1	7	45	40	17	21	0	0	8	8	72	77	40	12		
Total	205	197	5,943	5,795	5,165	5,656	2,001	2,385	288	419	13,602	14,452	382	295		

Note: More detail is available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

1 Roads and streets, parking and snow removal.

2 Net expenditures by the provinces and local expenditures netted against estimated transfer from the provinces.

3 Includes some local expenditure on communication and modes other than roads and transit systems.

Sources:

A Provincial/territorial departments of transport; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be underreported.

Net expenses by local governments are only netted of transfers reported by provincial governments.

B Derived from Statistics Canada, Public Institutions Division; data are on a calendar year basis.



## OVERVIEW OF EXPENDITURES AND REVENUES BY MODE

This section summarizes consolidated federal expenses and revenues by mode over the 1996/97 to 1999/2000 period. It also shows expenditures by other levels of government, netted against transfers received from other levels of government, from 1996/97 to 1998/99. Table 3-6 gives detailed information on this.

In 1998/99, the air mode accounted for four per cent of gross spending on transportation, a decline of 57 per cent since 1996/97. Aviation users contributed the most, 85 per cent, to government revenues. As a result, net spending in aviation was only 0.5 per cent of net government transport expenditure in 1998/99.

Spending in the marine mode is responsible for about five per cent of government annual transport spending in 1998/99. Since 1996/97, expenses have been reduced by 12 per cent. Revenues from users were the same in 1998/99 as in 1996/97. However, they are projected to increase by nine per cent in 1999/2000.

Rail mode spending has fallen by 14 per cent since 1996/97. In 1998/99, it accounted for only 1.5 per cent of gross government spending on transportation. While most of the outlays are subsidies, revenues accrue in large part from the leasing of hopper cars. Recently, the provinces have reduced their spending on rail transport to less than \$2 million a year.

Total spending on roads and transit systems was close to \$14.4 billion in 1998/99, 2.1 per cent more than in 1997/98. Since 1996/97, the growth has been 2.2 per cent a year. Public expenses on transit systems have grown at a faster rate, 9.3 per cent, to reach \$2.4 billion in 1998/99. This is one of the few transportation expenditure components that has shown a regular increase. In 1998/99, spending on roads and transit systems accounted for nearly 90 per cent of all net government expenditures on transportation.

The federal role in roads and transit systems consists of contribution to federal-provincial cost shared agreements, overseeing the management of the Confederation Bridge, and small road programs managed by federal departments other than Transport Canada; the maintenance of two Montreal bridges; a safety and policy function; transfer payments to provincial or local authorities; and small grants/subsidies to road users. Altogether, these expenses fell to \$525 million in 1998/99, a drop of 48 per cent from the previous year. Expenses are expected to further fall to \$400 million in 1999/2000.

TABLE 3-6: TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT

	(Millions of dollars)			
	1996/97	1997/98	1998/99	1999/2000 <sup>1</sup>
<b>Federal O&amp;M, Capital and Subsidies<sup>A</sup></b>				
Air	1,456	1,115	597	368
Marine	822	810	691	747
Road	288	276	256	226
Rail	711	1,013	525	400
Other	206	206	223	208
Sub-Total	3,483	3,420	2,293	1,949
<b>Provincial/Territorial/ Local<sup>B</sup></b>				
Air	97	76	74	N/A
Marine	100	91	121	N/A
Rail	11	2	2	N/A
Road	11,051	10,993	11,452	N/A
Transit	1,993	2,058	2,384	N/A
Other	276	321	419	N/A
Sub-Total	13,529	13,541	14,452	N/A
<b>Total Expenses: All Government Levels</b>				
Air	1,553	1,191	671	N/A
Marine	922	901	812	N/A
Rail	299	278	258	N/A
Road/Transit	13,756	14,065	14,361	N/A
Other	482	527	641	N/A
Sub-Total	17,012	16,961	16,744	N/A
<b>Federal Transportation Revenues<sup>C</sup></b>				
Air	1,277	935	597	307
Marine	73	68	73	79
Road/Rail	0	12	13	9
Other	34	12	18	9
Total	1,384	1,027	700	404
<b>Net Transportation Expenses</b>				
Air	276	256	74	N/A
Marine	849	833	740	N/A
Rail	299	266	246	N/A
Road/Transit	13,756	14,065	14,361	N/A
Other	448	515	624	N/A
Total	15,634	15,934	16,044	N/A

Note: More detail is available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

<sup>1</sup> Forecast as at January 31, 2000, for full year.

**Sources:**

- A Transport Canada; Main Estimates and Public Accounts of the federal departments concerned.
- B Provincial/territorial departments of transportation; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be underreported. Net expenses by local governments are only netted against transfers reported by provincial governments. Statistics Canada, Public Institutions Division; data are on a calendar year basis.
- C Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation.

The category "Other" in Table 3-6 includes overhead expenses by all levels of government expenditures related to multimodal policy, safety and economic analysis functions, as well as other activities such as Transport Canada's Security and Emergency Preparedness, and Research and Development. About four per cent of total net transport expenses are allocated to this category. Most of the revenues are recoveries from other departments for the provision of research projects or from fines and permits issued by Transport Canada.





# TRANSPORTATION AND SAFETY

# 4

*The safety and security of Canada's transportation system continues to be a top priority for the federal government. This commitment is reflected in all of Transport Canada's activities.*

Transport Canada's focus is on developing practical safety programs and effective regulations, and on ensuring that these regulations and standards are followed. In particular, it regulates and co-ordinates safety-related matters in several areas: aeronautics and airports; air and marine navigation; marine shipping facilities; commercial shipping; new motor vehicle standards; railways; bridges and canals connecting provinces with each other or with the US; and transportation of dangerous goods.

Responsibility for transportation safety in Canada involves many stakeholders, including the federal, provincial, territorial and municipal governments, industry and non-governmental organizations. Transport Canada works closely with all stakeholders to ensure high standards in transportation safety, but especially with the Transportation Safety Board and the provincial governments to maintain nationwide system safety. Transport Canada also works with foreign government agencies and organizations on several international safety initiatives.

This chapter describes recent trends in occurrence statistics for all modes of transport as well as the transportation of dangerous goods.

## TRANSPORTATION OCCURRENCES

Record lows in the number of occurrences in aviation and on the road made 1999 a particularly successful year in transportation safety. This was despite marginal increases in the rail and marine sectors. The aviation sector saw the fewest accidents involving Canadian-registered aircraft in the last 25 years, at 340. Likewise, road collisions also

represented the lowest number during this period, at 150,919 in 1998. While the number of marine accidents was up marginally, seven per cent over 1998, it was still 16 per cent below the five-year average. The number of rail accidents was also up slightly over 1998 levels, five per cent, yet remained below the comparable five-year average by six per cent. Despite these increases in rail and marine occurrences, the overall accident rate continued its downward trend.

These somewhat mixed results in terms of accidents/collisions were tempered by the fact that the number of fatalities fell significantly in each of the four major modes. Fatalities in air, marine and road each registered double-digit reductions from the five-year average of 20, 17 and 11 per cent, respectively, while rail fatalities were down six per cent. Overall, fatalities were 11 per cent lower than the five-year average.

These comparisons can be misleading, however, as they do not take into account the specifics of each mode, nor do they reflect the level of activity or exposure to risk associated with each.

Table 4-1 compares the most recent statistics on transportation occurrences by mode with the five-year average.

The accident rates shown for 1999, which attempt to take into account the level of activity in each mode, continued either to exhibit a general downward trend or were consistent with the five-year average. (Reliable activity measures for motor vehicles are not available.) While the accident rate for aviation was more than one full point below the five-year average (1.3), those for marine and rail were consistent with the five-year trend.

**TABLE 4-1: TRANSPORTATION OCCURRENCES BY MODE  
1999 vs FIVE-YEAR AVERAGE (1994 – 1998)**

	Aviation	Marine	Rail	Road <sup>1</sup>
<b>Accidents</b>				
Most recent year	340	525	1,129	150,919
Five-year average	371	624	1,196	161,095
<b>Fatalities</b>				
Most recent year	67	29	105	2,927
Five-year average	84	35	111	3,277
<b>Incidents</b>				
Most recent year	701	171	334	N/A
Five-year average	677	176	471	N/A

<sup>1</sup> 1998 Canadian Motor Vehicle Traffic Collision Statistics (the most recent statistics available) and for the 1993 – 1997 period; road fatalities are for 1997. All other modes are for the 1994 – 1998 period.

Source: Transportation Safety Board

Table 4-2 compares accident and fatality rates by mode for 1999 with the five-year average.

**TABLE 4-2: ACCIDENT RATES IN TRANSPORTATION  
1999 vs FIVE-YEAR AVERAGE (1994 – 1998)**

	Aviation <sup>1</sup>	Marine <sup>2</sup>	Rail <sup>3</sup>	Road
<b>Accidents</b>				
Most recent year	8.3	4.4	15.2	N/A
Five-year average	9.6	4.4	15.6	N/A

<sup>1</sup> Canadian registered aircraft only (per 100,000 hours flown).

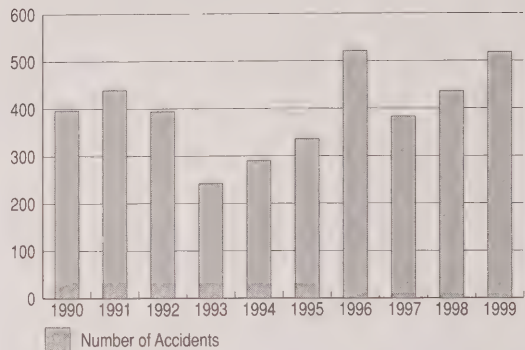
<sup>2</sup> Per 1,000 commercial vessel movements (Canadian flag vessels only).

<sup>3</sup> Per million train-miles.

Source: Transportation Safety Board

These aggregate measures of activity are intended to provide a point of reference in interpreting the occurrence statistics; however, each has its inherent limitations. In rail, for example, the measure of train-miles captures only that activity that occurs on main-track lines and does not extend to yards, spurs and sidings. Since roughly half the rail occurrences take place on non-main track areas, this tends to overstate the actual accident rate. Similarly for marine, measures of trip movements and vessel movements do not directly take into account the overall distance travelled. Accident rates for aviation can vary significantly whether measured through flying hours, aircraft movements or licences.

Figure 4-1 shows the number of transportation of dangerous goods reportable accidents for the period 1990 to 1999.

**FIGURE 4-1: REPORTABLE ACCIDENTS INVOLVING  
DANGEROUS GOODS, 1990 – 1999**

Source: Transport Canada, Dangerous Goods Accident Information System

## RAIL

### DOMESTIC OPERATIONS

The statistics presented in this section include all railways under federal jurisdiction.<sup>1</sup>

There were 1,129 rail-related accidents reported to the Transportation Safety Board in 1999. While this was up five per cent from the 1998 total of 1,076, it was still a decrease of six per cent from the five-year average of 1,197. The increase in the number of accidents, coupled with a marginal decrease in total train-miles, was reflected in a higher accident rate per million train-miles in 1999 of 15.2 over the 1998 rate of 14.3. Nonetheless, it was slightly better than the rate for the 1994 – 1998 five-year average of 15.6.

With the exception of main-track and non-main-track collisions, all accident types contributed to the increase in 1999. Of the total rail-related accidents, non-main-track train derailments accounted for the largest portion, with 36 per cent. Crossing accidents followed at 25 per cent and main-track train derailments at 11 per cent. The increase in non-main-track train derailments was mainly attributable to accidents involving single-car derailments in a yard, spur or siding, occurring at relatively slow speeds and with a low associated public risk.

Approximately 50 per cent of all main-track train derailments in 1999 resulted in either one or two cars derailling, and 12 per cent involved dangerous goods. Accidents involving a dangerous goods product represented 20 per cent of the total rail accidents in 1999,

<sup>1</sup> Since the passage of the *Canadian Transportation Act* on July 1, 1996, a growing number of federal rail lines have been transferred to other operators that now report to provincial jurisdictions. These provincial short-line operators now constitute upwards of 18 per cent of the total rail network in Canada.

down seven per cent from the previous five-year average. The number of accidents involving a release of dangerous goods product remained at roughly one per cent of the total.

A total of 334 incidents was reported to the Transportation Safety Board in 1999, down 24 per cent from the 440 reported in 1998, and down 29 per cent from the five-year average of 471. The majority of these incidents (50 per cent) involved dangerous goods cars leaking a product, but not as a result of an accident.

Table 4-3 summarizes rail accidents reported for the five-year period 1995 – 1999.

**TABLE 4-3: ACCIDENT RATES IN RAIL TRANSPORTATION, 1995 – 1999**

Year	Number of Accidents	Accident Rate <sup>1</sup>	Fatalities	Serious Injuries
1995	1,276	16.6	120	132
1996	1,305	17.6	117	129
1997	1,116	14.5	109	101
1998	1,076	14.3	101	73
1999	1,129	15.2	105	94
1994–1998 Average	1,197	15.6	112	112

Note:

<sup>1</sup> Number of accidents per million train-miles.

Source: Transportation Safety Board

In 1999, 105 people were fatally injured in rail-related accidents, up from 101 in 1998 but down from the five-year average of 112. The 1999 total of 97 fatal accidents represented a slight decline from the 1998 total of 98 and was below the five-year average of 103. The majority of the fatalities (93 per cent) were related to accidents involving trespassers (58 per cent) or associated with rail grade crossing accidents (35 per cent). The number of crossing accidents involving passenger trains remained relatively consistent in 1999 compared with the five-year average. Transport Canada, in partnership with its stakeholders, has several programs to address these safety concerns. Direction 2006, for example, is a major initiative aimed at reducing the number of trespasser and crossing fatalities by 50 per cent by the target year.

There was a total of 282 crossing accidents in 1999, a three per cent increase from the 1998 total of 273. The 1999 total remained well below the five-year average of 343. Although the number of rail-crossing accidents increased in 1999, that of fatalities and serious injuries was slightly lower than in the previous year and considerably lower than the five-year average.

Table 4-4 shows the number of railway crossing accidents by province from 1995 to 1999.

**TABLE 4-4: CROSSING ACCIDENTS BY PROVINCE, 1995 – 1999**

Province	1995	1996	1997	1998	1999
Newfoundland/Prince Edward Island/					
Nova Scotia (167)	5	8	5	3	7
New Brunswick (316)	12	6	5	2	4
Quebec (2,478)	58	61	51	48	50
Ontario (5,229)	121	91	75	65	94
Manitoba (3,038)	33	46	30	34	19
Saskatchewan (6,437)	44	49	33	38	30
Alberta (3,705)	66	71	70	54	52
British Columbia (1,039)	40	33	38	29	25
<b>Canada<sup>1</sup> (22,424)</b>	<b>379</b>	<b>365</b>	<b>307</b>	<b>273</b>	<b>282</b>
Crossing Fatal Accidents	39	39	30	38	32
Passenger Train Related Accidents	26	40	30	29	31

Note: Figures in brackets denote estimated number of public crossings in each province as of January 1999  
<sup>1</sup> Includes one accident in the Northwest Territories in 1999.

Source: Transportation Safety Board

The number of crossing accidents at automated crossings remained relatively constant at 45 per cent of the total crossing accidents in 1999. Although automated crossings accounted for the largest portion, this form of protection is generally in areas with relatively high motor vehicle traffic. The increase in 1999 can be attributed in part to crossing accidents occurring at non-automated farm crossings, where the number of accidents doubled to 10 in 1999 from five in 1998.

Table 4-5 summarizes trespasser accidents by province from 1995 to 1999.

**TABLE 4-5: RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 1999**

Province	1995	1996	1997	1998	1999
Newfoundland/Prince Edward Island/					
Nova Scotia	0	4	0	0	0
New Brunswick	6	3	0	0	0
Quebec	27	32	15	12	26
Ontario	41	55	47	36	46
Manitoba	13	1	4	4	1
Saskatchewan	3	3	4	2	3
Alberta	13	8	7	10	10
British Columbia	9	21	21	14	8
<b>Canada</b>	<b>112</b>	<b>127</b>	<b>98</b>	<b>78</b>	<b>94</b>
Fatal Trespasser Accidents	63	67	69	59	60
Passenger Train Related Accidents	23	28	24	25	23

Source: Transportation Safety Board

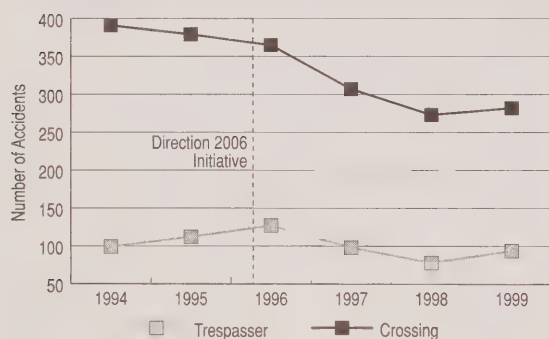


The number of trespasser accidents rose to 94 in 1999 from 78 in 1998, but remained well below the five-year average of 103. The majority of these accidents occurred in the Ontario and Quebec, 49 and 28 per cent, respectively. The number of fatal trespasser accidents remained relatively constant at 60, slightly below the five-year average of 62. Two thirds of all rail-related fatal accidents were a result of trespasser accidents, a consistent ratio during the past five years.

Through public awareness and education programs, monitoring and enforcement, safety programs and research, Transport Canada will continue to address the issues related to reducing accidents. In addition to Direction 2006, Transport Canada also continues to support the Operation Lifesaver Program, which focuses on education and public awareness.

Figure 4-2 plots the number of crossing and trespasser accidents since the launch of the Direction 2006 initiative in 1996. Significant reductions were achieved (particularly in grade crossing accidents) in the period immediately following the launch; the trend has slowed more recently, however.

FIGURE 4-2: NUMBER OF CROSSING AND TRESPASSER ACCIDENTS SINCE DIRECTION 2006, 1994 – 1999



Source: Transportation Safety Board

Two rail accidents in 1999 warranted particular attention. The first occurred in Thamesville, Ontario, where a VIA passenger train collided with stationary rail cars containing dangerous goods products. Two employees were fatally injured, and some train passengers suffered injuries.

The second occurred in St. Hilaire, Quebec, where 33 cars of a CN train carrying petroleum products derailed. A second CN freight train struck the derailed cars, which were obstructing their way, with a resultant 26 additional cars and two locomotives also derailed. Two crew members sustained fatal injuries and fires and

explosions were reported. In addition, 350 people from the town of St. Hilaire were evacuated because of heavy smoke.

## ROAD

The most recent annual data on motor vehicle traffic collision statistics is 1998 for fatalities, injuries and casualty collisions and 1997 for property damage only collisions.

### DOMESTIC OPERATIONS

Canada's road safety record has continued to improve steadily over the last several decades. In 1998, there were 2,927 fatalities resulting from motor vehicle accidents, the lowest annual total in 43 years. (Statistics of this nature have been recorded since 1945.) The number of road-related fatalities was down 4.5 per cent from 1997 and was significantly below (10.7 per cent) the 1993–1997 average.

Table 4-6 gives the national number of road-related casualty collisions, fatalities and injuries from 1993 to 1998.

TABLE 4-6: TOTAL ROAD CASUALTY COLLISIONS AND PERSONS INJURED OR KILLED, 1993 – 1998

Year	Casualty Collisions	Persons Killed	Persons Injured
1993	171,227	3,615	247,588
1994	169,649	3,263	245,110
1995	167,044	3,351	241,935
1996	158,990	3,091	230,890
1997	152,765	3,064	221,349
1998	150,919	2,927	217,614
1993 – 1997 Average	163,935	3,277	237,374
Percentage change 1998/Average	(7.9)	(10.7)	(8.3)
Percentage change 1997–1998	(1.2)	(4.5)	(1.7)

Source: 1998 Canadian Motor Vehicle Traffic Collision Statistics

Casualty collisions include all reportable motor vehicle accidents that result in a fatality or an injury. The steady downward progression has continued, with the national total falling 1.2 per cent from 1997 and 7.9 per cent from the 1993–1997 five-year average. The number of fatalities also declined in 1998, standing at 4.5 per cent below the 1997 level and 10.7 per cent below the comparable five-year average.

Table 4-7 shows the number of road fatalities in Canada classified by six major types of road users.

All categories, with the exception of bicyclists and motorcyclists, contributed to the continued overall decline in fatalities between 1993 and 1998. The category “drivers,” which represents the single largest segment of the road user population, also accounts for the largest share

**TABLE 4-7: ROAD FATALITIES BY CATEGORY OF ROAD USER, 1993 – 1998**

	1993	1994	1995	1996	1997	1998	1993 – 1997 Average
Drivers	1,772	1,626	1,652	1,518	1,540	1,479	1,622
Passengers	959	851	920	825	812	729	873
Pedestrians	479	429	416	465	402	401	438
Bicyclists	81	86	64	60	67	76	72
Motorcyclists	216	163	166	128	123	166	159
Other <sup>1</sup>	108	108	133	95	120	76	113

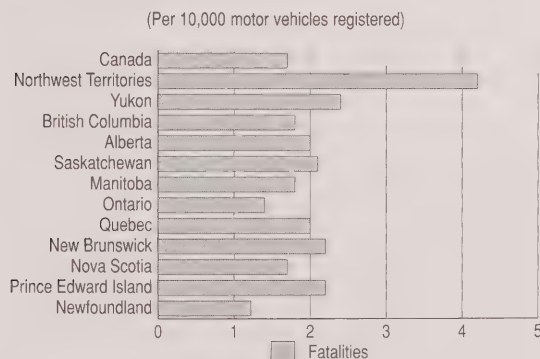
1 Other refers to any other type of road user not otherwise stated (e.g. snowmobiles) and also includes instances where road user type is not stated.

Source: 1998 Canadian Motor Vehicle Traffic Collision Statistics

of road fatalities. In 1998, this category of road user accounted for 51 per cent of total road fatalities, while “passengers” and “pedestrians” accounted for 25 per cent and 14 per cent, respectively.

From 1996 to 1998, the highest fatality rates in Canada were in the Northwest Territories and the Yukon, reflecting the relatively low number of vehicles registered in those territories and the more difficult driving conditions. Ontario, with the largest road network and the highest number of vehicle registrations, continued to have one of the lowest fatality rates during this period at 1.4 per 10,000 vehicles registered, behind Newfoundland at 1.2.

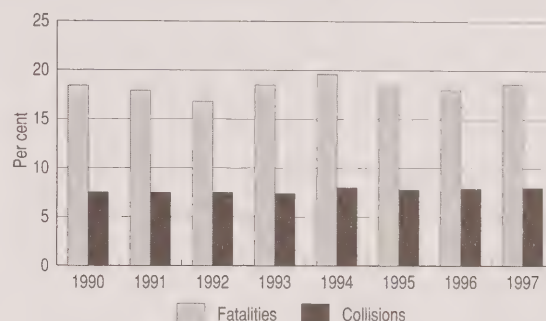
Figure 4-3 compares road fatality rates by province from 1996 to 1998.

**FIGURE 4-3: THREE-YEAR AVERAGE NUMBER OF FATALITIES BY PROVINCE, 1996 – 1998**

Source: Canadian Motor Vehicle Traffic Collision Statistics

From 1990 to 1997, vehicles involved in collisions with commercial vehicles accounted for approximately eight per cent of all vehicles involved in road collisions, yet accounted for roughly 18.6 per cent of all road fatalities. The number of fatalities resulting from collisions involving commercial vehicles increased slightly in 1997

over the previous year due, in large part, to the single vehicle/bus collision at Les Eboulements, Quebec, in October of that year. Figure 4-4 shows the percentage of road collisions and fatalities involving commercial vehicles from 1990 to 1997.<sup>2</sup>

**FIGURE 4-4: PERCENTAGE OF ROAD COLLISIONS<sup>1</sup> AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1997**

1 Collisions: Vehicles involved in collisions

Source: Transport Canada, Traffic Accident Information Database

Table 4-8 gives a breakdown of commercial and other vehicles involved in fatal collisions by type of vehicle from 1993 to 1997.

**TABLE 4-8: COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1997**

Vehicle Type	1993	1994	1995	1996	1997
Commercial					
Bus	37	43	31	39	32
Trucks greater than 4,536 kg	212	197	163	167	179
Tractor-trailers	343	328	346	294	335
Total Commercial Vehicles	592	568	540	500	546
Other vehicles involved in collisions with commercial vehicles	599	574	533	458	486
Total vehicles involved in collisions with commercial vehicles	1,191	1,142	1,073	958	1,032
All other vehicles involved in collisions	3,933	3,590	3,606	3,438	3,247
Total: all vehicles	5,124	4,732	4,679	4,396	4,279

Source: Transport Canada, Traffic Accident Information Database

In 1997, private automobiles accounted for 53 per cent of vehicles involved in fatal collisions. This share was down slightly from that of 1993, when the automobile accounted for 56 per cent. Light duty trucks and vans had the second largest share of vehicles involved in fatal collisions in 1997, with 25 per cent, followed by the combined categories of Truck (Tractor Trailer, Trucks less than 4,536 kg and other) with 13 per cent.

2 Disaggregation by commercial vehicle is currently only available to 1997.

Table 4-9 compares the number of vehicles involved in fatal motor vehicle collisions by type of vehicle from 1993 to 1997.

**TABLE 4-9: VEHICLES INVOLVED IN FATAL COLLISIONS  
BY VEHICLE TYPE, 1993 – 1997**

Vehicle Type	1993	1994	1995	1996	1997
Automobile	2,866	2,605	2,583	2,431	2,277
Pickup truck	1,147	1,083	1,077	1,037	1,059
Truck:					
Tractor-trailer	343	328	346	294	335
Truck greater than 4,536 kg	212	197	163	167	179
Other	23	23	25	15	21
Bus:					
School	12	16	10	12	8
Intercity	1	7	5	7	4
Transit	10	11	6	7	9
Bus unspecified	14	9	10	13	11
Motorcycle <sup>1</sup>	217	164	170	141	126
Bicycle	85	91	70	63	74
Farm equipment	31	32	36	37	32
Snow equipment	56	39	64	50	41
Train/Streetcar	19	20	11	16	11
Motor home	18	32	24	28	19
All-terrain vehicles	10	13	4	8	9
Other	60	62	75	70	64
<b>Total</b>	<b>5,124</b>	<b>4,732</b>	<b>4,679</b>	<b>4,396</b>	<b>4,279</b>

<sup>1</sup> Includes mopeds.

Source: Transport Canada, Traffic Accident Information System

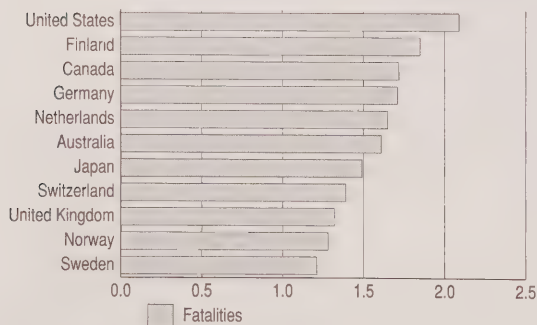
## INTERNATIONAL COMPARISONS

As a result of its continuing successes in improving motor vehicle safety, Canada ranks as one of the top Organization for Economic Co-operation and Development (OECD) member countries that are comparable.

Figure 4-5 compares fatality rates per motor vehicles registered for selected OECD member countries from 1996 to 1998.

**FIGURE 4-5: AVERAGE MOTOR VEHICLE FATALITY RATES  
AMONG OECD COUNTRIES, 1996 – 1998**

(Per 10,000 motor vehicles registered)



Source: International Road Traffic Accident Database, OECD

Vehicle ownership rates are considered to be an indicator of motor vehicle activity and exposure to risk. Canada's vehicle ownership rate was 58 per 100 inhabitants in 1997, compared with 76 in the United States, which has the highest among OECD countries. Higher ownership rates in Canada and the United States indicate a greater degree of reliance on this mode of transportation and therefore a generally higher exposure to risk for road users.

## MARINE

### OVERVIEW

There were 525 shipping accidents in 1999, up seven per cent from 1998 but 16 per cent below the 1994 – 1998 five-year average, and approximately half the 1990 total. Over the past decade, there has been an average annual decline in shipping accidents of seven per cent. This decline has been relatively steady, with increases recorded in only three years, 1990, 1994 and 1999. In both 1990 and 1994, the largest increase was in the number of flooding accidents; in 1999, the greatest upturn was in the number of groundings (143), propeller/rudder/structural damage (40) and collision (24) accidents. These increases were largely attributable to fishing vessels.

As in preceding years, the largest proportions of shipping accidents in 1999 by type of accident were in the categories grounding at 27 per cent, followed by striking at 15 per cent, fire/explosion at 13 per cent and flooding at 12 per cent. The number of capsizing accidents (seven) declined notably in 1999, representing roughly half the 1998 total and one third of the five-year average.

A total of 573 vessels were involved in shipping accidents in 1999. Fishing vessels accounted for 280, or 49 per cent, of these, consistent with historical trends. This total for fishing vessels did, however, represent a 11 per cent increase from 1998. As in previous years, the majority of these vessels were involved in grounding and flooding accidents, at 28 and 20 per cent, respectively.

The proportion of commercial vessels involved in accidents in 1999, 39 per cent, was on a par with the previous five-year average. There were 225 vessels involved, one per cent below the 1998 total and 19 per cent below the five-year average. Of those vessels that pose a greater risk to persons and the environment, ferry (22 vessels in 1999) and passenger (18 vessels) remained comparable with their respective five-year averages, while tanker vessels (14) showed a modest decrease. The one notable increase over 1998 was in the number of accidents involving barge vessels (36), up 33 per cent in 1999 but still on a par with the five-year average. The largest

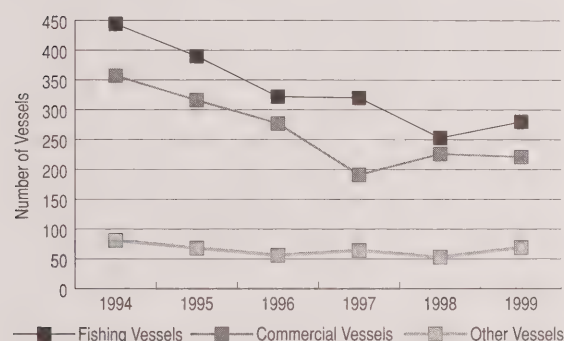


decrease in recent years has been in the number of accidents involving vessels in the bulk carrier/oil, bulk, ore (OBO) category, with 67 reported in 1999, compared with the five-year average of 97. Striking accidents and grounding accidents were the most common type reported for commercial vessels, at 28 and 22 per cent, respectively.

In 1999, there were 69 accidents involving vessels in other categories (i.e. service, non-commercial and other), 23 per cent over the 1998 total and nine per cent above the five-year average. Service vessels accounted for the single largest component, with almost 51 per cent.

Figure 4-6 shows the number of vessels involved in shipping accidents by vessel type from 1994 to 1999.

FIGURE 4-6: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL TYPE, 1994 - 1999



Source: Transportation Safety Board

In 1999, there were 84 foreign-flag vessels involved in shipping accidents, down slightly from the 1998 total of 87 but 30 per cent below the five-year average of 120.

Bulk carrier/OBO was the most common vessel type at 45 per cent. The majority of shipping accidents involving foreign-flag vessels involved striking, at 33 per cent, and groundings, at 25 per cent. The Laurentian Region reported the greatest number of foreign-flag vessels involved in shipping accidents, with 26, followed by the Western Region, with 23.

In addition to shipping accidents, there were 69 accidents aboard ship in 1999, up 14 per cent from the 1998 total of 59 and 13 per cent from the 1994-1998 average of 60. The majority of these accidents, 43 per cent, occurred on commercial vessels, while 37 per cent occurred on fishing vessels. The Maritimes Region reported the largest increase, up 35 per cent over the five-year average, and represented one quarter of the total, the same share held by the Western Region.

There were 29 marine-related fatalities in 1999, down from 48 in 1998 and below the five-year average of 35. Approximately half (15) of the casualties resulted from accidents aboard ship. Of the 29 fatalities, 14 were on a fishing vessel, eight on a commercial vessel and seven on a non-commercial vessel. Only two marine accidents resulted in multiple casualties. In one, a collision between a pleasure craft and a tug towing a barge on the West Coast resulted in five fatalities; in the other, a charter fishing boat in the Laurentian Region foundered with the loss of three lives.

Forty one vessels were lost in 1999, down 16 per cent from 1998 and 40 per cent from the five-year average. Vessels of less than 150 gross registered tonnage accounted for the largest proportion (93 per cent) of those lost vessels in 1999. Most were small fishing vessels.

The number of shipping incidents in 1999 (171) was consistent with the total for the previous five-year average of 176. The most common, 41 per cent, were related to engine/rudder/propeller problems. The greatest reduction in the longer-term trend has been in the number of close-quarters situations reported. In 1999, this type of incident represented 19 per cent of the total, still well below the five-year average of 29 per cent.

Table 4-10 shows marine occurrences by type from 1994 to 1999.

TABLE 4-10: MARINE OCCURRENCES, 1994 - 1999

	1994	1995	1996	1997	1998	1999	1994-1998 Average
Shipping Accidents	797	695	605	533	489	525	(624)
Accidents Aboard Ship	67	56	58	59	59	69	(60)
Fatalities	40	39	25	24	48	29	(35)
Vessels Lost	88	82	60	60	49	41	(68)
Incidents	228	199	132	155	167	171	(176)
Injuries	81	82	71	83	80	81	(79)

Source: Transportation Safety Board

## REGIONAL OVERVIEW

The Transportation Safety Board (TSB) defines six regional boundaries for occurrence reporting purposes. Accidents occurring in foreign waters involving Canadian vessels are also captured as part of the regular statistical occurrence reporting.

The Western Region, which has routinely reported the single largest regional total of shipping accidents (167 in 1999), registered the largest decrease from 1998 levels, with a 14 per cent decline. Shipping accidents in this region have been decreasing since 1994, when the total was 300. The decline has been largely attributed to the number of fishing vessels involved. Vessels lost in this region in 1999 represented 39 per cent of the national total.



Conversely, the trend for the Maritimes Region, which had been declining since 1994, showed a 26 per cent increase in shipping accidents over 1998. The increase was seen mostly in the number of accidents involving fishing vessels, up to 92 in 1999 from 60 in 1998. The greatest percentage of fishing vessel accidents was due to grounding and flooding, at 24 and 23 per cent, respectively. Vessel losses that occurred in this region accounted for approximately 27 per cent of the national total.

The largest year-over-year increase in 1999 occurred in the Newfoundland Region. The number of shipping accidents there rose by 38 per cent from 1998 to 95, a 35 per cent increase from the five-year average. Of the 103 vessels involved, 74 per cent were fishing vessels, up 36 per cent from 1998. The leading categories amongst fishing vessel accidents were fire/explosion at 20 per cent, propeller/rudder/structural damage at 19 per cent and flooding at 18 per cent. The number of vessel losses occurring in this region represented about one quarter of the national total.

In 1999, there were 67 shipping accidents in the Laurentian Region, up four per cent from 1998. Much of the increase was due to a rise in the number of accidents involving tug/barge vessels (15), up from six in 1998 and from 12 for the five-year average. In addition, there were 25 grounding accidents, twice as many as in 1998. Commercial vessels were involved in 76 per cent of these grounding accidents for the Laurentian Region.

The Central Region reported 50 shipping accidents, a 21 per cent decrease from the previous year's total. Fewer accidents involving ferry/passenger vessels (five in 1999, 13 in 1998) were behind this overall decline.

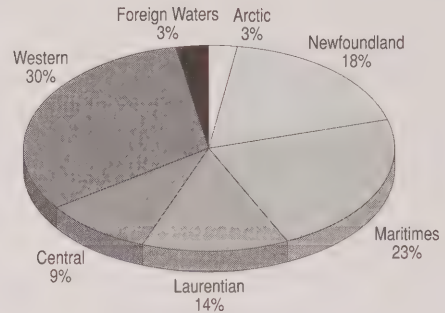
The Arctic Region saw 15 vessels involved in shipping accidents, three times the 1998 total of five and almost double the five-year average of eight. The increase was attributed in large part to accidents involving service type vessels.

Figure 4-7 compares the percentage share of shipping accidents by Transportation Safety Board regions for 1999.

### COMMERCIAL SHIPPING ACTIVITY

In terms of the level of shipping activity, the estimated<sup>3</sup> number of vessel trips for Canadian commercial vessels in 1999 has decreased by four per cent from 1998, whereas the number of vessels involved (154), remained equivalent. Foreign-flag vessel trips are estimated to have declined

FIGURE 4-7: SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 1999

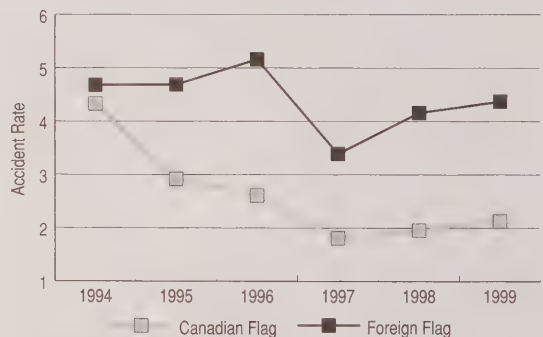


Source: Transportation Safety Board

by 11 per cent from 1998, while the number of vessels involved (71) was on par with the 1998 total. When comparing accident rates<sup>4</sup> for Canadian and foreign vessels over the same period, it is important to recognize that included in Canadian commercial vessels are the daily operations of numerous tugs and barges, whereas foreign-flag vessels mainly comprised larger vessels such as tankers, bulk carriers and container vessels. This incongruity contributes to a generally lower accident rate for foreign-flag vessels. Canadian commercial fishing vessel activity was estimated to have increased by 14 per cent in 1999.

Figure 4-8 charts the accident rate of Canadian-flag and foreign-flag commercial vessels from 1994 to 1999.

FIGURE 4-8: COMMERCIAL VESSEL ACCIDENT RATE,<sup>1</sup> 1994 - 1999



1 The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

Source: Transportation Safety Board

<sup>3</sup> Forecast based on data for the first two quarters of 1999.

<sup>4</sup> The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

## PORT STATE CONTROL

Canada is signatory to two Memoranda of Understanding (MOU) on Port State Control: the Paris MOU, which includes 18 European countries as well as Canada, and the Tokyo MOU, which comprises 18 Asia-Pacific countries and Canada. Members of the Paris MOU are required to obtain an inspection rate of 25 per cent of vessels entering the members' ports. Members of the Tokyo MOU are working toward a regional percentage of individual vessels at 50 per cent of vessels entering the region's member ports.

In 1999, in Canada, 1,078 inspections were carried out under these MOUs on vessels from 57 different flags of registry. Of the vessels inspected, 52 per cent were found to have defects, and of these, 22 per cent were serious enough to require the vessels to be detained. Most detentions issued in Canada were issued under three categories of offences: lifesaving equipment, firefighting equipment and structural defects. The majority of vessels inspected, 44 per cent, were bulk carriers, with 17 per cent of these being detained. The average age of detained vessels was 16.5 years.

In 1999, there were seven Canadian vessels inspected in foreign ports that are signatory to the Paris MOU. They were found to have deficiencies and two were detained. Of the vessels inspected, there were five supply ships, one passenger ship and one special purpose vessel. As for the defects leading to detention, for the passenger ship, its detention was related to its oil record book and oily water separating equipment while the supply ship, certification issues tied to minimum safe manning, oil pollution prevention and cargo ship safety radio were behind its detention.

## RECREATIONAL BOATING

In 1997, the most recent year for which data is available, there were 138 drownings<sup>5</sup> from recreational boating in Canada. This is a 12 per cent decline from the previous year's total and a three per cent drop from the 1992 – 1996 five-year average of 143. At 33 per cent, fishing accounted for the largest proportion of drownings from recreational boating; this was consistent with 1996. At 43, drownings as a result of powerboating showed a marked increase over the 1996 total of 30.

Ontario reported the largest percentage of drownings from recreational boating, with 30 per cent, followed by Atlantic and Quebec, both at 20 per cent. There were no recreational boating drownings in the Northwest Territories or the Yukon in 1997, down significantly from the 1996 total of 11.

The number of non-drowning boating fatalities dropped to 16 in 1997 from 20 in 1996. Of these, 11 involved collision/trauma and five were the result of immersion hypothermia. In 1997, nearly half the fatalities for both these incident types occurred in British Columbia.

## AVIATION

### DOMESTIC OPERATIONS

This section summarizes the aviation occurrences involving Canadian-registered aircraft. It does not include occurrences involving foreign aircraft, nor does it include occurrences involving ultra-light or advanced ultra-light aircraft.

In 1999, there were 340 accidents involving Canadian-registered aircraft, down 12 per cent from the 1998 total of 385, and eight per cent lower than the 1994 – 1998 five-year average of 371. The 1999 total represents the lowest annual number of aviation accidents involving Canadian-registered aircraft in the last 25 years. Table 4-11 shows the number of accidents and fatal accidents by type of aircraft from 1990 to 1999.

TABLE 4-11: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1990 – 1999

Type of aircraft	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Accidents</b>										
<b>Aeroplanes Involved</b>										
Airliners	3	11	7	14	6	7	5	8	14	7
Commuter Aircraft	12	6	10	9	8	19	12	14	10	12
Air Taxi/Aerial Work	150	145	132	122	116	134	106	120	129	92
Private/State	250	216	235	221	173	155	151	153	164	163
Helicopters Involved	70	64	34	52	61	68	56	56	56	45
Other Aircraft <sup>1</sup>	14	14	17	8	21	12	12	10	16	15
<b>Total</b>	<b>498</b>	<b>453</b>	<b>434</b>	<b>422</b>	<b>380</b>	<b>390</b>	<b>342</b>	<b>356</b>	<b>386</b>	<b>340</b>
<b>Fatal Accidents</b>										
<b>Aeroplanes Involved</b>										
Airliners	0	3	0	3	0	1	1	0	0	1
Commuter Aircraft	2	1	1	0	2	2	1	0	1	2
Air Taxi/Aerial Work	13	18	9	16	14	21	12	11	9	6
Private/State	21	34	29	26	14	20	20	18	14	20
Helicopters Involved	8	7	3	3	3	11	7	8	6	4
Other Aircraft <sup>1</sup>	3	2	4	0	0	0	3	8	2	4
<b>Total<sup>2</sup></b>	<b>47</b>	<b>64</b>	<b>47</b>	<b>48</b>	<b>33</b>	<b>52</b>	<b>44</b>	<b>36</b>	<b>31</b>	<b>35</b>

1 Includes gliders, balloons and gyrocopters.

2 The number of aircraft involved may not sum to the number of accidents, as some accidents involve multiple aircraft.

Source: Transportation Safety Board

Over this ten-year period, the number of accidents for most aircraft types declined significantly, most notably in the categories of air taxi/aerial work and private aircraft. The number of accidents involving helicopters also decreased substantially. Private/state aircraft accounted

5 The information is coming from the Canadian Red Cross National Drowning Report.

for 48 per cent of the total number of accidents, while air taxi/aerial work aircraft operations accounted for 27 per cent. Although the number of accidents involving private/state aircraft has been steadily decreasing over time, this category has consistently represented nearly half the total accidents involving Canadian-registered aircraft and, in 1999, accounted for roughly 57 per cent of the total of fatal accidents.

Airliners include commercial aircraft that have a maximum take-off weight of greater than 8,618 kilograms or aircraft that are authorized to carry more than 20 passengers. In 1999, Canadian-registered airliners were involved in seven accidents, down from 14 in the previous year and from the 1994 – 1998 five-year average of eight. One of these resulted in fatalities. In January, at Mayne Island, British Columbia, a Kelowna Flightcraft aircraft collided with terrain and had two fatalities.

Regional or large commuter aircraft are those having a maximum take-off weight of less than 8,618 kilograms and capable of carrying 10 to 19 passengers/crew. In 1999, there were 12 accidents involving aircraft in this type of operation, up slightly from the previous year (10) but remaining in line with the five-year average of 13. In 1999, there were two fatal accidents involving Canadian-registered commuter aircraft, each reported as collision with terrain and each resulting in a single fatality. The first occurred in March, at Davis Inlet, and involved a de Havilland DHC6 departing Goose Bay with two crew on a VFR flight to Davis Inlet. It was reported that weather conditions presented poor visibility with blowing snow. The second took place in August, at Sept-Îles, and involved a Beech 1900D that was travelling from Port-Meunier to Sept-Îles. The pilot was fatally injured, while the co-pilot suffered serious injuries on impact.

Most commercial air accidents involve aircraft in the air taxi/aerial work categories. These types of operations accounted for 27 per cent of the total number of accidents involving Canadian registered aircraft, a decrease of 29 per cent from 1998 and 24 per cent from the 1994-1998 average. One fatal accident was reported in 1999 involving an aerial application operation.

The accident rate in 1999 was 8.3 accidents per 100,000 hours flown, below the both rate for 1998 and the five-year average.

By region, the number of accidents continued to decrease in 1999 and to follow a downward trend for all regions over the 1990 – 1999 period. In 1999, the Prairie and Northern Region accounted for 37 per cent of all accidents involving Canadian-registered aircraft, followed by Ontario with 31 per cent and Quebec with 13 per cent. With the exception of the Ontario Region, which remained

unchanged over 1998 (105 accidents) and the Quebec Region, which increased marginally (by two accidents), all regions reported fewer accidents in 1999. The largest year-over-year decrease occurred in the Pacific Region in 1999 – 1998, which saw the number of accidents fall from 70 to 40, or 43 per cent.

Table 4-12 summarizes air accidents by region over the ten-year period, while Table 4-13 shows the corresponding number of air fatalities by region.

**TABLE 4-12: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1990 – 1999**

<i>Transport Canada Region</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Accidents</b>										
Atlantic	32	23	24	23	23	22	18	20	20	16
Quebec	97	83	87	76	70	78	39	60	41	45
Ontario	121	100	104	119	84	74	72	84	105	106
Prairie & Northern	135	142	114	108	110	130	122	108	131	124
Pacific	108	93	93	88	81	72	83	72	70	40
Outside Canada	5	12	12	8	12	14	8	12	17	9
<b>Total</b>	<b>498</b>	<b>453</b>	<b>434</b>	<b>422</b>	<b>380</b>	<b>390</b>	<b>342</b>	<b>356</b>	<b>384</b>	<b>340</b>

Note: The number of aircraft involved may not sum to the number of accidents as some accidents involve multiple aircraft.

Source: Transportation Safety Board

**TABLE 4-13: FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1990 – 1999**

<i>Transport Canada Region</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Fatalities</b>										
Atlantic	0	5	0	2	2	6	6	2	5	1
Quebec	21	17	8	22	20	9	12	18	27	9
Ontario	21	12	16	23	16	31	12	8	9	14
Prairie and Northern	12	32	17	25	11	26	13	17	20	17
Pacific	25	29	32	25	23	32	20	22	12	26
Outside Canada	12	278	7	5	8	3	8	10	10	0
<b>Total</b>	<b>91</b>	<b>373</b>	<b>80</b>	<b>102</b>	<b>80</b>	<b>107</b>	<b>71</b>	<b>77</b>	<b>83</b>	<b>67</b>

Source: Transportation Safety Board

In 1999, air fatalities were down 19 per cent from both the previous year and the 1994–1998 average. Although the Pacific Region recorded the fewest number of accidents, it registered the highest number of fatalities, with 26, followed by the Prairie and Northern Region, with 17, and Ontario, with 14. There were 43 serious injuries resulting from accidents, declining slightly from the 1998 total of 48 and the five-year average of 49.

The number of reported incidents involving either a Canadian- or foreign-registered aircraft decreased by ten per cent from 1998 levels and was only 3.5 per cent more than the 1994 – 1998 average. All types of incidents contributed to the overall decline in 1999. Loss of separation (which refers to an instance in which less than the authorized minimum separation or distance between



two aircraft was not assured, and includes collisions and risk of collision), declared emergencies, engine failures and smoke/fire incidents were all down considerably.

## INTERNATIONAL COMPARISONS

Table 4-14 compares the percentage of fatal air accidents involving airliner and commuter aircraft for Canada and the US from 1994 to 1999.

**TABLE 4-14: FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1994 – 1999**

	1994	1995	1996	1997	1998	1999	1994 – 1998 Average
<b>Canada</b>							
Accidents	14	26	17	22	24	19	21
Fatal Accidents	2	3	2	0	1	3	2
Fatalities (%)	14.3	11.5	11.8	0	4.2	15.8	9.5
<b>US</b>							
Accidents	33	48	49	66	56	64	50
Fatal Accidents	7	5	6	9	1	6	6
Fatalities (%)	21.2	10.4	12.2	13.6	1.8	9.4	12.0

Note: Figures pertain to airliner and commuter aircraft only. Civil Aviation Regulations (CAR's) definition; aircraft with 10 or more seats.

Source: Transportation Safety Board of Canada; US National Transportation Safety Board

Comparing Canadian and US accident data is made difficult by the fact that each country classifies and records its occurrence data differently, and due to fundamental differences in the domestic air network and infrastructure of each country. Canada's air transportation network is largely linear in nature, extending the entire breadth of the country; the US, on the other hand, uses a highly developed hub and spoke network, fanning out in all directions. Both countries, however, are members of international panels and working groups whose goals are to establish a common taxonomy and to standardize aviation safety related information. Work from such collaborative efforts should greatly facilitate comparisons and understanding of international safety records.

Based on the preliminary US aviation accident statistics for 1999, there was an increase in the number of American-registered scheduled airlines flying under Part 121 Air Carriers<sup>6</sup> and Commuters.<sup>7</sup> Both accidents and fatal accidents for US-registered aircraft were up, by eight and five per cent, respectively. At 64, US aviation accident totals for these categories were well above the 1994 – 1998 five-year average of 50, while the total for fatal accidents was consistent with the five-year average of six.

From a safety perspective, using a rate of fatal accidents per number of accidents as a rough means of comparison, Canada had a slightly lower overall rate for the five-year period, although year-to-year variations tend to fluctuate widely. In terms of safety, 1998 was a banner year for the US air industry, while Canada enjoyed its most successful year in 1999.

## TRANSPORTATION OF DANGEROUS GOODS

Every year over 27 million dangerous goods shipments are transported across Canada. Most of these shipments include goods that directly influence and improve the lifestyle that Canadians have come to expect and enjoy. The Transport of Dangerous Goods (TDG) program promotes public safety during the transportation of goods that can threaten public safety when involved in an accidental release.

TDG accidents are called "reportable" if they are severe enough to meet the reporting requirement defined in TDG program regulations. Very few TDG accidents are caused by the dangerous goods themselves. In 1999, there were three reportable TDG accidents directly caused by dangerous goods. One fatality resulted from one of the three accidents. A fraction of the 1999 accident data includes estimates.

Table 4-15 compares reportable accidents involving dangerous goods by mode and type of accident.

**TABLE 4-15: REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS BY MODE OF TRANSPORT, 1990 – 1999**

Year	In transit				Not in transit	Total
	Road	Rail	Air	Marine <sup>1</sup>		
1990	183	17	2	0	194	396
1991	155	27	4	2	251	439
1992	140	25	0	1	228	394
1993	103	25	1	0	113	242
1994	114	30	1	0	145	290
1995	109	19	3	0	205	336
1996	239	35	9	1	237	521
1997	166	16	6	1	194	383
1998 <sup>2</sup>	179	13	4	0	239	435
1999	201	19	3	0	295	518
Average	159	23	3	1	210	395

1 The TDG program does not cover dangerous goods transported in bulk on ships or by pipeline  
2 Revised figures.

Source: Transport Canada, Dangerous Goods Accident Information System

6 Those aircraft carrying in excess of 29 passengers.

7 Those aircraft carrying 10 to 29 people.



In 1999, there were 518 reportable dangerous goods accidents. In-transit accidents in Table 4-15 includes those that occurred during actual transport, while handling accidents are those that took place at handling facilities. Many handling accidents occur in warehouses while the goods are being handled prior to loading or unloading. Between 1990 and 1999, more dangerous goods accidents occurred at the handling stage than while they were being transported.

The number of deaths related to dangerous goods in transit is low.

Table 4-16 summarizes the number of deaths, as well as the number and severity of injuries caused by dangerous goods at reportable accidents.

**TABLE 4-16: DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1990 – 1999**

Year	Deaths due to	Injuries due to Dangerous Goods			Totals
	Dangerous Goods	Major	Moderate	Minor	
1990	0	8	42	0	50
1991	1	9	9	21	39
1992	0	3	3	34	40
1993	18 <sup>1</sup>	1	2	14	17
1994	0	0	3	29	32
1995	0	3	58 <sup>2</sup>	2	63
1996	1	2	10	16	28
1997	2	15	14	4	33
1998	2	1	36	12	49
1999	2	11	14	13	38
Average	2.6	5.3	19.1	14.5	38.9

<sup>1</sup> All 18 deaths are from the same bus-truck collision, Lac Bouchette, Quebec.

<sup>2</sup> 31 employees were exposed to a carbon disulphide release in Ottawa (Ontario).

Source: Transport Canada, Dangerous Goods Accident Information System

Table 4-17 gives the total number of deaths and injuries that occurred at reportable transportation of dangerous goods accidents. In many cases, the deaths and injuries are caused by the accident itself (e.g. a collision), not by the goods.

**TABLE 4-17: TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1990 – 1999**

Year	Deaths	Injuries			Totals
	All causes	Major	Moderate	Minor	
1990	15	21	70	15	106
1991	14	33	27	35	95
1992	8	16	15	47	78
1993	31 <sup>1</sup>	9	16	24	49
1994	13	8	20	34	62
1995	7	27	66 <sup>2</sup>	13	106
1996	9	16	37	23	76
1997	15	50	73	11	134 <sup>3</sup>
1998	13	38	56	15	109
1999	27 <sup>4</sup>	79 <sup>4</sup>	130 <sup>5</sup>	29	238
Average	15.2	29.7	51.0	24.6	105.3

<sup>1</sup> 20 deaths (2 not due to dangerous goods) resulted from one bus-truck collision, Lac Bouchette, Quebec.

<sup>2</sup> 31 employees were exposed to a carbon disulphide release in Ottawa, Ontario.

<sup>3</sup> 27 passengers injured in one bus-truck collision in Fox Creek, Alberta.

<sup>4</sup> 7 deaths and 45 injuries were due to a multiple highway vehicle collision in Windsor, Ontario.

<sup>5</sup> 98 passengers were injured in a train collision with three hopper railway vehicles in Thamesford, Ontario.

Source: Transport Canada, Dangerous Goods Accident Information System

In Tables 4-16 and 4-17, minor injuries refer to those injuries that require first-aid treatment, moderate injuries require emergency hospital treatment, and major injuries require overnight hospitalization.

# TRANSPORTATION — ENERGY AND ENVIRONMENT

# 5

*The goal of sustainable transportation is to make sure that environmental, economic and social considerations are an integral part of decisions affecting transportation activity.*

The main environmental effects of the transportation sector are air, water and noise pollution, greenhouse gas (GHG) emissions, and the use of land and other natural resources. Transportation activities contributing to these pressures include the construction of infrastructure; the production, operation, maintenance and disposal of vehicles; and the provision of energy and fuel.

The wide scope of transportation activities, the environmental pressures they cause, and the range of private- and public-sector stakeholders involved result in an intricate policy context for the sector's sustainability. The goal of sustainable transportation is to make sure that environmental, economic and social considerations are an integral part of decisions affecting transportation activity. Promoting sustainable transportation is a responsibility shared by governments, industry and individuals. This chapter provides an overview of some key sustainable development initiatives undertaken in 1999.

## TRANSPORTATION AND CLIMATE CHANGE

### THE TRANSPORTATION CLIMATE CHANGE TABLE

In December 1997, Canada and other developed countries negotiated the Kyoto Protocol to the United Nations Framework Convention on Climate Change. If ratified, the Protocol will commit Canada to reducing its greenhouse gas emissions to six per cent below 1990 levels during the five-year period of 2008 to 2012.

In May 1998, federal, provincial and territorial ministers of transportation established the Transportation Climate Change Table as part of a national process to develop a climate change strategy. Its mandate was to analyse options to achieve progressively greater reductions of greenhouse gas emissions within transportation until reaching or, if possible, surpassing a six per cent reduction from 1990 levels.

In November 1999, the Table completed its Options Paper. Although this paper did not propose a single set of measures for achieving the six per cent reduction, it did present various measures that are sufficient to reach or surpass the Kyoto target. In 1999, the Table consulted with key stakeholders on the process and completed further consultations on the Options Paper in February 2000.

The Table's membership reflects a broad range of interests in transportation. Table 5-1 describes the membership of the Transportation Climate Change Table.

TABLE 5-1: MEMBERSHIP OF THE TRANSPORTATION CLIMATE CHANGE TABLE

- Modes (air, rail, marine, truck, bus, transit)
- Fuels (petroleum, alternative fuels)
- Road Vehicles (domestic, international)
- Non-governmental organizations (Pollution Probe, Pembina, National Round Table on the Environment and the Economy, Transportation Association of Canada)
- Users (drivers (Canadian Automobile Association), shippers (Canadian Pulp and Paper Association))
- Municipalities (Vancouver, Toronto)
- Provinces (British Columbia, Alberta, Manitoba, Ontario, Quebec)
- Federal (Transport Canada, Natural Resources Canada)

Source: *Transportation and Climate Change: Options for Action*, November 1999

## CLIMATE CHANGE ACTION FUND

The Climate Change Action Fund (CCAF) was established by the federal government to help Canada meet the commitments it made in December 1997, in Kyoto, Japan. The CCAF was announced in the 1998 budget, where \$150 million was allocated over three years to support the development of an implementation strategy to meet these commitments and to facilitate early action to reduce greenhouse gas emissions. Of the 158 projects that have been announced, 34 projects are transportation-related.

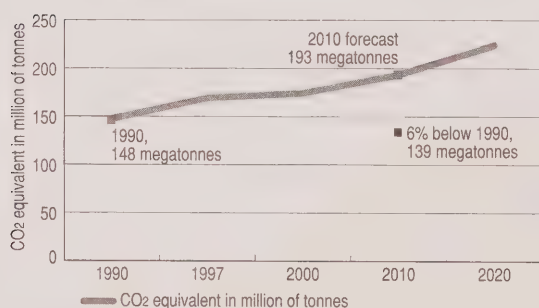
Two project areas are of particular interest to transportation:

- technology early action measures which provide cost-shared support for the development and deployment of emission-reducing technologies: of the 20 projects in that category that have been announced, around one-third are transport-related; and
- public education and outreach activities directed at informing Canadians about climate change and encouraging them to take action: of the 108 such projects that have been announced, around one-quarter are transportation-related.

## TRANSPORTATION AND CLIMATE CHANGE

Transportation is the single largest source of greenhouse gasses in Canada, accounting for 25 per cent of the total in 1997. If current trends continue, greenhouse gas emissions from transportation are expected to exceed 1990 levels by 32 per cent by 2010 and 53 per cent by 2020. To achieve the targetted six per cent reduction from 1990 levels, emissions from transportation would have to be reduced by about 54 megatonnes, or 28 per cent, from the forecasted level of 193 megatonnes in 2010. Figure 5-1 shows the implications of the Kyoto Protocol on forecasted greenhouse gas emissions from the transportation sector, from 1990 to 2020.

FIGURE 5-1: KYOTO PROTOCOL IMPLICATIONS FOR TRANSPORT SECTOR GREENHOUSE GAS EMISSION PROJECTIONS, 1990 – 2020



Source: Transportation and Climate Change: Options for Action, November 1999

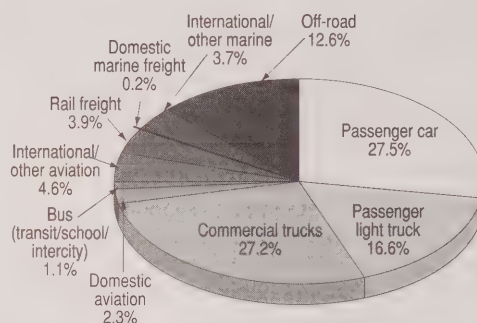
Road transport accounts for roughly 70 per cent of greenhouse gas emissions from the transportation sector, with 44 per cent of this total coming from cars and light-duty trucks and 27 per cent from commercial vehicles

(primarily heavy-duty trucks). The next largest single source is off-road use, which includes industrial equipment (agriculture, forestry, mining and construction), recreational vehicles, boats, and lawn and garden equipment.

The three sources of emissions expected to grow most rapidly between 1990 and 2020 are aviation by Canadian carriers (forecasted to increase by 99 per cent), off-road uses (diesel by 66 per cent and gasoline by 57 per cent) and on-road diesel (74 per cent). The largest source of transportation emissions, on-road gasoline, is expected to increase by 44 per cent between 1990 and 2020.

Figure 5-2 breaks down the sources of greenhouse gas emissions from the transportation sector for 1997.

FIGURE 5-2: SOURCE OF TRANSPORTATION GREENHOUSE GAS EMISSIONS, 1997



Source: Transportation and Climate Change: Options for Action, November 1999

The mitigation targets established in the Kyoto Protocol do not cover emissions from international air and marine activities. Under the protocol, Parties agreed that the International Civil Aviation Organization (ICAO) will address greenhouse gas emissions from international aviation and that the International Marine Organization (IMO) will address international shipping emissions. Transport Canada is a member of both and is participating on an ICAO working group that is identifying the most efficient market-based options to reduce international emissions within civil aviation.

## THE TRANSPORTATION CLIMATE CHANGE TABLE'S ANALYSIS

The work of the Table represents a comprehensive but early look at the potential for reducing greenhouse gas emissions from transportation in Canada. This is the first time that an analysis has been undertaken that looks at the costs and benefits of options across the entire transportation system. The Options Paper is not intended,

however, to provide a prescription for implementing different measures; this will require more detailed analysis, design and consultation, including analysis by individual jurisdictions.

The Table commissioned 24 research studies and analysed more than 100 different measures designed to reduce emissions from transportation. While the cost per tonne of reducing greenhouse gas emissions is very important, other key social and economic criteria must also be considered in determining the best measures for reducing emissions.<sup>1</sup>

Table 5-2 lists the criteria used to assess measures for reducing greenhouse gas emissions from transportation.

TABLE 5-2: FOR ASSESSING TRANSPORTATION GHG MEASURES

- |  |   |
|--|---|
| • GHG impact   | • Cost-effectiveness  |
| • Public support                                       | • Economic impacts  |
| • Complementarity to other measures                    | • Ease of implementation                                    |
| • Certainty/risk                                       | • Equity effects  |
| • Ancillary impacts (e.g. safety, health, environment) | • Other financial factors (e.g. taxes, costs to government) |

Source: *Transportation and Climate Change: Options for Action*, November 1999

The criteria were used as a general guideline to group the measures into one of four categories:

- **Most Promising Measures** — those that have positive benefits or cost less than \$10 per tonne are easier to implement or do not involve significant resource transfers. They may need additional analysis and design.
- **Promising Measures** — those having low to modest cost or those that complement other measures in the package. They may need additional analysis or development.
- **Less Promising Measures** — higher cost measures that may have greenhouse gas reduction potential in the medium- to longer-term and/or require significant additional analysis, much greater public acceptance, or considerable technological development.
- **Unlikely Measures** — those that Table members believe do not warrant active consideration at this time because they are made redundant by those in the first three categories or because they are high-cost, have limited potential to reduce emissions, or are extremely difficult to implement.

## THE OPTIONS FOR TRANSPORTATION

The transportation measures have been grouped into five packages: passenger, road infrastructure, road vehicles and fuels, freight, and off-road. These packages provide a useful framework for grouping measures that work well together, are aimed at a particular end use, or provide a focus for action in the transportation sector.

### Passenger

Passenger travel accounts for the bulk of transportation greenhouse gas emissions. It also presents a challenge in changing the travel, commuting and living habits of Canadians. The **most promising** measures are largely voluntary and aimed at increasing public awareness and changing travel behaviour, primarily in urban areas. Telecommuting, car sharing, enhanced driver education and changing the tax treatment of employer-provided transit benefits would, together, form an effective strategy for employers to implement voluntary trip-reduction programs in their organizations. The **promising** measures combine strong incentives for alternatives, such as public transit and bicycling, while discouraging car use through charges on parking, starting with the three largest urban centres. Further reductions would require more aggressive pricing mechanisms for roads and parking, large costs for the purchase of more efficient planes and ferries, or measures to restrict travel.

### Road Infrastructure

Changes in the way Canada builds, maintains and uses roads and highways could also play a role in reducing greenhouse gas emissions from transportation. The **most promising** measures focus on enforcing existing speed limits and on using intelligent transportation systems (ITS) and synchronized traffic signals to improve traffic flow. The **promising** measures add two additional intelligent transportation systems, more frequent resurfacing of the national highway system and high-occupancy vehicle lanes to help travellers avoid congested areas. There is concern, however, that intelligent transportation systems could, by improving traffic congestion, induce more traffic and thereby increase emissions. Further and more difficult reductions involve road-pricing systems, changing pavements from asphalt to concrete, and reducing speed limits to 90 kilometres per hour.

### Road Vehicles and Fuels

Adopting vehicles and fuels that are less carbon-intensive is critical to reducing greenhouse gas emissions from transportation. However, measures to improve vehicle

<sup>1</sup> The Table's Options Report and the 24 research studies can be downloaded from Transport Canada's Web site at [www.tc.gc.ca/envaffairs/english/climatechange/ttable/](http://www.tc.gc.ca/envaffairs/english/climatechange/ttable/).



### THE NEW NATURAL GAS VEHICLE PROGRAM

Natural Resources Canada announced a new natural gas for vehicles program funded from the \$7 million Market Development Incentive Payments fund. The program will run from February 1, 1999, through January 31, 2002, and will provide support for factory-built natural gas vehicles purchased, conversion of vehicles to natural gas operation, vehicle refuelling appliances and facilities, marketing and awareness activities approved in the Canadian Natural Gas Vehicle Alliance business plan, and co-funded research and development that is essential to fill gaps in natural gas vehicle technology. The various program elements will benefit the environment by reducing emissions, including greenhouse gases and urban smog.

technologies and increase the use of alternative fuels are complex and can raise significant economic issues. As a result, the Table did not propose any *most promising* measures for this category. The largest reductions in the *promising* measures would come from setting a harmonized target with the US to achieve a 25 per cent reduction in greenhouse gas emissions from new cars and light trucks by 2010. Also, the Table did assess several measures that would expand the use of alternative fuels, particularly in niche markets. These included expanding production of ethanol for blending in gasoline at ten per cent; expanding the infrastructure for propane and natural gas; mandating the use of alternative fuels in government fleets; and promoting the use of alternative fuels in buses and heavy-duty trucks. Further and more difficult measures include purchase incentives for fuel-efficient cars and "feebates." A feebate policy levies surtaxes on higher fuel consuming vehicles and provides a rebate for lower fuel consuming vehicles.

### Freight

The *most promising* freight measures represent cost-effective voluntary efforts, such as codes of practice and improved training and operating practices for truck drivers. A range of *promising* measures for trucking includes load matching to reduce empty or partial trips; the use of new technologies such as improved lubricants; scrappage programs to remove older, inefficient trucks from the road; reducing speed limits to 90 kilometres per hour; and allowing longer trucks in three provinces where they are not currently permitted. Also, two measures encourage the use of more efficient rail cars and engines by increasing the capital cost allowance on rail. Further and more difficult options include the use of alternative fuels and fuel cells for railways, and additional, higher cost truck technology measures.

### Off-Road

The Table was not able to identify any *most promising* measures for the off-road category, as very little is known about this extremely diverse mix of equipment, which

includes forestry, mining, agricultural, construction, lawn and garden equipment, fishing boats, and recreational vehicles such as snowmobiles. The Table did identify as *promising* three possible measures that could achieve reductions from recreational vehicles and some construction, mining and agricultural equipment.

### FUEL TAXES

A number of the measures studied by the Table include the use of market mechanisms such as prices and fees, including parking charges, road pricing and fuel taxes. Prices play a role in determining the overall demand for transportation, the development and take-up of new more efficient technologies, and the choice of transportation services. Charges and fees could be used to better reflect the full cost of different transportation services, thereby ensuring their most efficient use. The Table analysed several models of fuel taxes, but did not reach a consensus on using fuel taxes as a measure to reduce greenhouse gas emissions. The use of moderate fuel taxes as a means of funding improvements in transportation, particularly in urban areas as a source of funding for transit, generated the most, but not unanimous, support. Under the assumption of medium fuel price elasticity, an urban gasoline tax increase of four cents a litre is estimated to generate \$600 million in tax revenues and 1.4 megatonnes of greenhouse gas savings in 2010 and 2.6 megatonnes by 2020.

### TAXES AND CHARGES IN MONTREAL AND VANCOUVER

Montreal's Metropolitan Transportation Agency (AMT) collects revenues from different sources to support public transit. These include a 1.5 cent per litre additional fuel tax in the Greater Montreal area. The AMT can also collect an annual tax assessed on non-residential off-street parking, although it does not currently do so.

The Greater Vancouver Transportation Authority (GVTA), Translink, will receive four cents per litre of fuel tax to contribute to the financing of its operations. Also, the GVTA will have the authority to introduce new sources of revenue including from vehicle charges (after 2001), tolls on projects sponsored by the GVTA and increased transit fees.

## OPTIONS REPORT CONCLUSIONS AND RECOMMENDATIONS

The Options Report is intended to identify the costs and benefits of different options, highlight areas of potential, and identify issues and concerns to be addressed. As such, it represents an initial but important step.

There is no single approach that will meet the Kyoto target. Technology has great potential, but technology alone

will not allow Canada to meet the Kyoto time frames. A balanced greenhouse gas strategy for transportation will have to address the various parts of Canada's transportation system, including vehicles, fuels, infrastructure and carriers, and will also have to consider consumer behaviour.

The Table has identified a range of *most promising* measures that are cost-effective or easier, or that would likely meet with public support. These could generate 10.8 megatonnes of reductions in 2010, at a net benefit of \$32 per tonne. This represents about 20 per cent of the Kyoto target in transportation. The cost to governments would be \$3.5 billion over 20 years. Table 5-3 lists the most promising measures and the projected greenhouse gas reductions in 2010 and 2020.

TABLE 5-3: MOST PROMISING MEASURES

Measures Package	GHG reductions in 2010 (In megatonnes)	GHG reductions in 2020 (In megatonnes)
Passenger	3.7	4.3
Road Infrastructure	5.0	5.8
Road Vehicles and Fuels	0	0
Freight	2.0	2.3
Off-road	0	0
<b>Total Most Promising</b>	<b>10.8</b>	<b>12.4</b>

Source: Transportation and Climate Change: Options for Action, November 1999

A second category, *promising* measures, has the potential to reduce emissions by a further 32 megatonnes in 2010, at a net cost of \$5 per tonne. These measures move beyond the strictly voluntary, relying on financial incentives, infrastructure improvements and targets to encourage new technologies, improve energy and transportation efficiency, and change practices and behaviour. They may, however, require significant government or private-sector investment. They may also involve additional analysis, design, consultation or international discussions before implementation. Table 5-4 lists further promising measures and the projected greenhouse gas reductions in 2010 and 2020.

TABLE 5-4: PROMISING MEASURES

Measures Package	GHG reductions in 2010 (In megatonnes)	GHG reductions in 2020 (In megatonnes)
Passenger	10.1	11.4
Road Infrastructure	1.5	2.1
Road Vehicles and Fuels	8.9	26.3
Freight	7.0	8.1
Off-road	4.3	N/A
<b>Total Promising</b>	<b>31.8</b>	<b>47.9</b>

Source: Transportation and Climate Change: Options for Action, November 1999

Together *most promising* and *promising* measures would lead to an estimated reduction of 42.6 megatonnes of GHG emissions in 2010, 11-14 megatonnes short of the Kyoto target.

To reduce emissions in transportation further, the Table has identified less promising measures that are more difficult and expensive, and that generally involve restricting activity or introducing pricing mechanisms, such as road and parking pricing.

The Table identified areas for further work, including:

1. **Data Issues** — Data on transportation is limited in a number of areas.
2. **Analytical Issues** — Additional analytical work is under way on the regional impacts of the proposed transportation measures and on intercity rail and bus transportation. Further analytical work was also recommended to quantify competitiveness impacts and to examine design issues for specific measures.

As the national process continues, the Table's analysis will be integrated with those of 15 other issue tables, and the most effective options for the Canadian economy will be assessed. Energy and environment ministers will consider a national climate change strategy in 2000. This will be followed by public consultations on the national climate change strategy and a report to First Ministers in 2001.

## TRANSPORT CANADA'S SUSTAINABLE DEVELOPMENT STRATEGY — AN UPDATE

Transport Canada, like all federal government departments, is required to table its second Sustainable Development Strategy (SDS) in Parliament by December 2000. Transport Canada's first such strategy, tabled in 1997, was designed to help foster a sustainable transportation system — one that is safe, efficient and environmentally sound for Canada's present and future generations. To this end, Transport Canada identified eight major challenges and 47 areas for action. Table 5-5 lists the eight challenges.

**TABLE 5-5: TRANSPORT CANADA'S EIGHT STRATEGIC ENVIRONMENTAL CHALLENGES**

1. Minimize the risk of environmental damage from transportation accidents
2. Promote greening of operations in the transportation sector
3. Reduce air emissions from transportation sources
4. Promote education and awareness of sustainable transportation
5. Assess Transport Canada's direct budgetary transfers for their environmental impact
6. Refine sustainable transportation performance indicators
7. Understand the environmental costs of transportation
8. Develop and promote the application of cleaner transportation systems and technologies.

Source: Transport Canada, *Sustainable Development Strategy*

In the fall of 1999, Transport Canada developed a Sustainable Development Action Plan, to turn the department's commitments into action.<sup>2</sup> There are three areas of notable accomplishments.

- **Moving on Sustainable Transportation (MOST) Program** — The Minister of Transport launched this program in September 1999.<sup>3</sup> It provides \$1 million over three years to encourage projects from environmental, industry, academic and other groups that:
  - stimulate the development of innovative tools, approaches and practices in increasing the sustainability of Canada's transportation system;
  - realize quantifiable results on Transport Canada's sustainable development priorities; and
  - provide Canadians with practical information and tools in better applying sustainable transportation thinking to their daily lives.
- **Environmental Management System (EMS)** — In 1999, Transport Canada's Environmental Management System was expanded to include a broader scope of departmental activities and operations. The first annual report on Transport Canada's Environmental Management System<sup>4</sup> was published in March 1999. It details achievements in greening the department's internal operations. Highlights in EMS implementation for 1999 include:
  - The replacement of 20 fleet vehicles with alternative-fuel vehicles.
  - The upgrade of ozone depleting substances inventory to an online database.
  - A commuting survey of Transport Canada headquarters' employees, which indicates almost 70 per cent of employees are walking, biking or taking the bus to work.

- A partnership with the Canadian Standards Association has resulted in the publication of the CSA document *Guide to the implementation of ISO 14001 at Airports* in October 1999. This guide is to help airport operators in Canada achieve conformance with the international standard.

Transport Canada is committed to identify and manage contamination at all of its properties by 2003. Transport Canada has identified 610 contaminated sites of which 533 are confirmed contaminated and 77 are suspected. Most of these sites are small spill areas that pose no threat to the environment or health. Transport Canada has made significant progress in this endeavour and will continue to invest resources in the identification, evaluation, clean up and reporting of its contaminated sites. In the three fiscal years ending in 1999, Transport Canada spent a total of \$22 million on assessments and \$12 million on remediation.

- **Sustainable Development Performance Indicators** — Transport Canada undertook an extensive internal exercise to develop a draft set of performance indicators for its eight sustainable development challenges. The resulting draft set of internal performance indicators will give Transport Canada a better way to measure progress toward implementing its commitments, as well as assisting in the development of concrete action plans for its 2000 Sustainable Development Strategy.

## CLEANER AIR

Most air pollution is caused by the fossil fuels burned in vehicles, homes, thermal power plants and factories. Many chemicals have been identified in urban air pollution. A small number of these have been found to contribute to a range of air quality problems in Canada. These pollutants include nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), sulphur dioxide (SO<sub>2</sub>), particulate matter (PM) and volatile organic compounds (VOC). In 1995, it was established that 57 per cent of NO<sub>x</sub> emissions, 67 per cent of CO, five per cent of SO<sub>2</sub>, 20 per cent of PM and 28 per cent of VOCs in Canada were attributable to transportation. When some of them combine, they produce smog or acid rain.

## SMOG

Transport Canada has participated in the development of Canada-wide standards to deal with priority pollutants that

2 Transport Canada's Sustainable Development Action Plan can be downloaded from its Web site at: [www.tc.gc.ca/envaffairs/english/sustainability/sds\\_e.html#03](http://www.tc.gc.ca/envaffairs/english/sustainability/sds_e.html#03) TC SDS Action Plan

3 Transport Canada's MOST program is described on its Web site at: [www.tc.gc.ca/envaffairs/MOST](http://www.tc.gc.ca/envaffairs/MOST).

4 Transport Canada's 1998 EMS Annual Report can be downloaded from its Web site at: [www.tc.gc.ca/envaffairs/english/ems/ems-english/english.html](http://www.tc.gc.ca/envaffairs/english/ems/ems-english/english.html).



contribute to smog. In the fall of 1999, the Canadian Council of Ministers of the Environment (CCME) accepted, in principle, the recommended Canada-wide Standards for Particulate Matter and Ozone. These standards set numerical air quality targets to protect the environment, to reduce the risk to human health, and to demonstrate the commitment and importance of federal, provincial and territorial co-operation to take action.

#### ONTARIO'S DRIVE CLEAN PROGRAM

Emissions testing and repair under the Drive Clean program started in January 1999 in the Greater Toronto Area and in Hamilton-Wentworth and on April 1, 1999, became a mandatory requirement for vehicle registration and ownership transfer. In its first year of operation, Drive Clean achieved an estimated 6.7 per cent reduction in smog-causing pollutants. Owners of repaired vehicles under Drive Clean achieved total estimated fuel savings equal to more than 120,000 fill-ups for a mid-size car. This equates to a reduction in carbon dioxide of 18,500 tonnes. When fully implemented by 2004, the program will require emissions tests for 5.2 million light-duty vehicles and 200,000 heavy duty trucks across most of southern Ontario.

#### SULPHUR IN GASOLINE

In 1999, Environment Canada announced that new regulations under the *Canadian Environmental Protection Act* were approved, phasing in a limit of 30 parts-per-million of sulphur content in gasoline by January 1, 2005, a reduction of more than 90 per cent. It is estimated that over 20 years, low sulphur gasoline will prevent over 2,100 premature deaths, 93,000 incidences of bronchitis in children, five million other health related incidents such as asthma attacks, and 11 million acute respiratory symptoms such as coughs, pneumonia and croup.

#### UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UN-ECE) CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

The United Nations Economic Commission for Europe has developed its eighth protocol under the Convention on Long-Range Transboundary Air Pollution (LRTAP). This new and innovative multi-effect, multi-pollutant protocol amounts to an international agreement to reduce smog. In developing Canada's position for the protocol negotiations, Transport Canada assisted in determining the submission for mobile source emissions. Canada and the United States expect significant health and environmental benefits from the implementation of programs to reduce SO<sub>2</sub>, NO<sub>x</sub> and VOC emissions as well

as from the ozone annex being negotiated under the Canada-US Air Quality Agreement.

#### INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) AND NITROGEN OXIDES

In February 1999, the International Civil Aviation Organization approved changes to its regulations that will reduce nitrogen oxide emission levels by 16 per cent for engines produced after December 31, 2003. All changes to ICAO regulations are implemented in Canada through the Canadian Aviation Regulations administered by Transport Canada.

The industry predicts annual improvements in fuel efficiency of one per cent a year, due to improved technology and operating procedures. However, growth estimates for the industry range from one per cent to two per cent a year. Reductions in emissions per kilometre from existing aircraft will likely therefore be offset by increases in distances travelled. The net effect over time could be a steady emission rate or increased emissions from aircraft. The challenge is to continue working with the ICAO to further reduce nitrogen oxide emissions from the aviation sector and to add requirements to control particulate matter emissions.

Emission reductions are also possible from ground support activities in this sector. Transport Canada participates on the ICAO Committee on Aviation Environmental Protection working group, which is focusing on the reduction of emissions at airports and from aircraft. This working group will also promote operational opportunities for this sector through international standards and guidelines.

#### VEHICLE EMISSIONS INSPECTION CLINICS

In the summer of 1999, Transport Canada once again partnered with Environment Canada to conduct Vehicle Emissions Inspection Clinics across Canada. The primary objective of the clinics is to raise awareness of on-road vehicles' contribution to smog-causing emissions.

#### LOW-SPEED VEHICLES

Low-speed Vehicles (LSVs) are four-wheeled electric vehicles which have a minimum attainable speed of 32 kilometres per hour and a maximum of 40 kilometres per hour. Due to the smaller size and the reduced mass of LSVs, there is a potential for significant reduction in energy consumption when an LSV is used in lieu of the passenger car. In addition, the Canadian definition for LSVs will require that they be electrically driven, effectively providing a zero emission vehicle with



### VANCOUVER'S REGIONAL TRANSPORTATION NETWORK — TRANSLINK

Translink was officially launched in April 1999. Translink is committed to integrated, locally controlled, and environmentally sensitive transportation. Translink streamlines functions previously administered by provincial, regional and municipal governments. It is expected to smooth out the provision and delivery of transportation services by integrating transportation development and financial decision-making. It will continue to work on the following goals, which were initiated prior to its official start date:

- increase the number of buses
- work toward the completion of the Rapid Transit System linking Coquitlam, New Westminster and Vancouver
- double the capacity of the transit system in the next 10 years
- provide opportunities for more diverse transit service through subsidiaries and new methods of service delivery
- implement the new Air Care II standards
- develop the first strategic transportation plan to support the Greater Vancouver Regional District's Livable Region Strategic Plan.

More information is available on the Translink Web Site at [www.translink.bc.ca](http://www.translink.bc.ca).

significantly reduced noise levels in comparison to a passenger car. Canada Gazette Part II is being finalized which will amend the *Motor Vehicle Safety Regulations* to introduce LSVs as a new class of vehicle in Canada.

### RAILWAY SAFETY ACT — ENVIRONMENTAL PROTECTION AND EMISSIONS CONTROL

With the amendment of the *Railway Safety Act* which came into force on June 1, 1999, Transport Canada now has the authority to regulate the release of pollutants into the environment from the operation of railway equipment, with the intent to contribute to the environmental sustainability of the rail transportation industry.

Transport Canada's Railway Safety Directorate is in the process of developing a strategy to respond to the amendment of the *Railway Safety Act* and determining the nature and the extent of a possible environmental rail safety program. The Railway Safety Directorate is also considering alternate methods to the establishment of emissions regulations.

## LEGISLATION AIMED AT IMPROVING ENVIRONMENTAL QUALITY

### CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

On September 14, 1999, the Parliament of Canada granted Royal Assent to the new *Canadian Environmental Protection Act, 1999* (CEPA 1999). The legislation is expected to come into force in the spring of 2000.

The new Act provides the government with stronger powers to protect the environment and human health. Minister of the Environment David Anderson announced \$72 million in new funding for implementation of the Act. There will be more regulations in areas such as engine emissions, as well as changes to the way in which things are regulated. While the 1988 Act focused on managing pollution, the guiding principles of the 1999 Act are pollution prevention, an integrated ecosystem approach, the precautionary principle, and the need to foster intergovernmental co-operation.

The 1999 Act expands the authority to control the components and the handling of fuels and provides for a national fuels mark (similar to an ecologo) to be used at gas station pumps. The legislative authority to set engine emission standards for new motor vehicles will be transferred from Transport Canada's *Motor Vehicle Safety Act* to the *Canadian Environmental Protection Act, 1999*, once the new legislation is in force. This legislative authority will also be expanded to cover other types of engines (e.g. off-road vehicles, generators, lawn mowers, etc.).

### CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA)

The *Canadian Environmental Assessment Act* (CEAA) requires that an environmental assessment be conducted before designated federal departments/entities issue certain approvals for proposed projects as defined in CEAA and its Regulations.

Transport Canada participated in the development of the CEAA "Canada Port Authority (CPA) Environmental Assessment Regulations" which came into force on July 28, 1999. The Regulations fulfill a commitment made in passing CEAA and the *Canada Marine Act*. CPAs are now responsible for conducting environmental assessments

and for meeting the requirements of the Regulation. As part of its responsibilities under the *Canada Transportation Act* and the *Canada Marine Act*, Transport Canada will monitor and report on the implementation of the Canada Port Authority Environmental Assessment process.

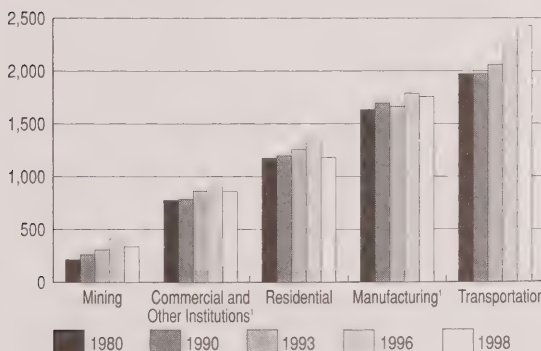
Transport Canada worked closely with the Canadian Environmental Assessment Agency to introduce changes to the "Comprehensive Study List Regulations" related to marine terminals. The Regulations now require a proposed marine terminal designed to handle 25,000 deadweight tonnes to undergo a comprehensive environmental assessment when the terminal is not located on lands routinely or historically used, or designated following public consultation, for that purpose.

The CEAA "Inclusion List Regulations" have also been amended to require an environmental assessment of proposed remediation of contaminated land in Canada.

## ENERGY DEMAND

Transportation is the single largest energy user in Canada. In 1998, transportation accounted for about one third of energy used, or 2,426 petajoules of a total of 6,974. Transportation was followed by manufacturing (1,757 petajoules), residential (1,181), commercial and institutions (858), mining (337), agriculture (225), public administration (130), construction (48) and forestry (12). Figure 5-3 shows total energy use for the five highest energy-consuming sectors in the Canadian economy for selected years from 1980 to 1998.

**FIGURE 5-3: TOTAL ENERGY USE IN THE CANADIAN ECONOMY BY SECTOR – FIVE HIGHEST ENERGY CONSUMERS, 1980 – 1998**

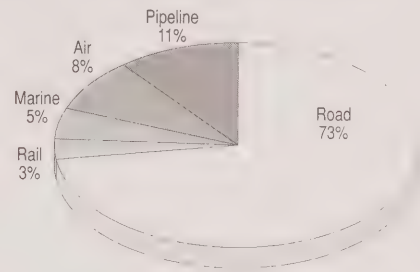


1 Net of transportation activities.

Source: Transport Canada based on data from Statistics Canada's Quarterly Report on Energy Supply-Demand in Canada, Cat. 57-003

Figure 5-4 shows energy use in the transportation sector by mode in 1998. Road is the biggest consumer of energy at 73 per cent, followed by pipelines, air, marine and rail. Energy use and greenhouse gas emissions are directly related: road transport, for example, accounts for roughly the same proportion of total greenhouse gas emissions from transportation as energy consumed.

**FIGURE 5-4: TRANSPORTATION ENERGY USE BY MODE, 1998**



Source: Transport Canada based on data from Statistics Canada's Quarterly Report on Energy Supply-Demand in Canada, Cat. 57-003

Table 5-6 shows energy use in the transportation sector by fuel for selected years from 1980 to 1998. For traditional fuels, the per cent of diesel and jet fuel used has increased, reflecting higher growth in air travel and transportation industries using diesel (i.e. railways, trucks, buses and pipelines) than in the rest of the transportation sector. The percentage use of gasoline, primarily by private transportation, and light and heavy fuel oil by marine, have decreased, reflecting slower growth rates in these sectors, but also fuel efficiency improvement in private transportation vehicles. The percentage use of alternative fuels, most notably natural gas, has increased.

**TABLE 5-6: TRANSPORTATION ENERGY USE BY FUEL, 1980 – 1998**

	(Per cent)				
Fuel	1980	1990	1993	1996	1998
Gasoline	63.7	56.5	55.4	51.8	51.4
Diesel	18.9	23.7	22.7	24.5	25.2
Jet Fuel	7.7	7.9	6.9	8.3	8.3
Light and Heavy Fuel Oil	5.2	3.0	2.7	2.4	3.0
Natural Gas	4.0	6.9	10.0	10.9	10.2
Liquefied Natural Gas	0.1	1.3	1.6	1.5	1.1
Primary Electricity	0.4	0.6	0.6	0.6	0.8
Total	100.0	100.0	100.0	100.0	100.0

Source: Transport Canada based on data from Statistics Canada's Quarterly Report on Energy Supply-Demand in Canada, Cat. 57-003

## LOOKING AHEAD

Governments across Canada, industry and stakeholders will continue to take action to address transport-related environmental challenges. Their objective is to promote sustainable transportation by ensuring that environmental, economic and social considerations are factored into decisions affecting transportation activity. Partnerships and clear and open lines of communications will be essential in achieving this objective.

# TRANSPORTATION AND REGIONAL ECONOMIES

# 6

*In 1998, the growth in the importance of transportation at the provincial/territorial level was driven primarily by Ontario, where economic growth was served largely by trucking services.*

*In terms of total transportation, the top four provinces rank the same as their provincial economies.*

Each mode of transport — road, marine, rail, and air — makes its own contribution to the economy of each province and territory. This chapter examines the role played by regional transportation as an essential contributor to the nation's economy.

The importance of transportation in the regional context can be assessed in several ways. Two of these are

- transportation's importance within the provincial economies
- provincial transportation's importance within the national transportation and economy.

The first perspective was used in the two previous annual reports. This year's report presents the relative importance of provincial transportation within the national context. This approach provides the relative economic weight of the provinces, an important perspective in Canada given the large disparity in size of its provinces and territories.<sup>1</sup>

Transportation industries cover all commercial transportation activities, i.e. transport of freight or passengers for a fee. Three indicators measure the relative importance of regional transportation:

- value-added<sup>2</sup> of provincial transportation industries
- employment in provincial transportation industries

- expenditures on transport-related goods and services.

The value-added and employment indicators measure the supply or production of transportation. The indicator for transport-related expenditures measures the demand for transportation in a broader context; that is, it includes expenditures by households and investment by government and industry,<sup>3</sup> as well as other government transportation-related expenditures.<sup>4</sup>

## THE SUPPLY OF TRANSPORTATION

### STRUCTURE OF PROVINCIAL ECONOMIES

The importance of provincial transportation within the national economy is related to the size and structure of the provincial economies. Also important are the provinces' primary commodities production and their specific geography. Figure 6-1 portrays the size and structure of each provincial economy relative to the national economy. Four provinces account for most of the economic activity in Canada, with Ontario accounting for 41 per cent of

1 In this chapter, "territories" refers to the total of the Yukon, Northwest and Nunavut territories.

2 Value-added refers to the payments such as wages and profits made to labour and capital, which are the principal factors used in production throughout the provincial economy. Because value-added is determined by payments to labour and capital, transport's importance to provincial economies is determined by the location of the workers and capital employed by commercial carriers.

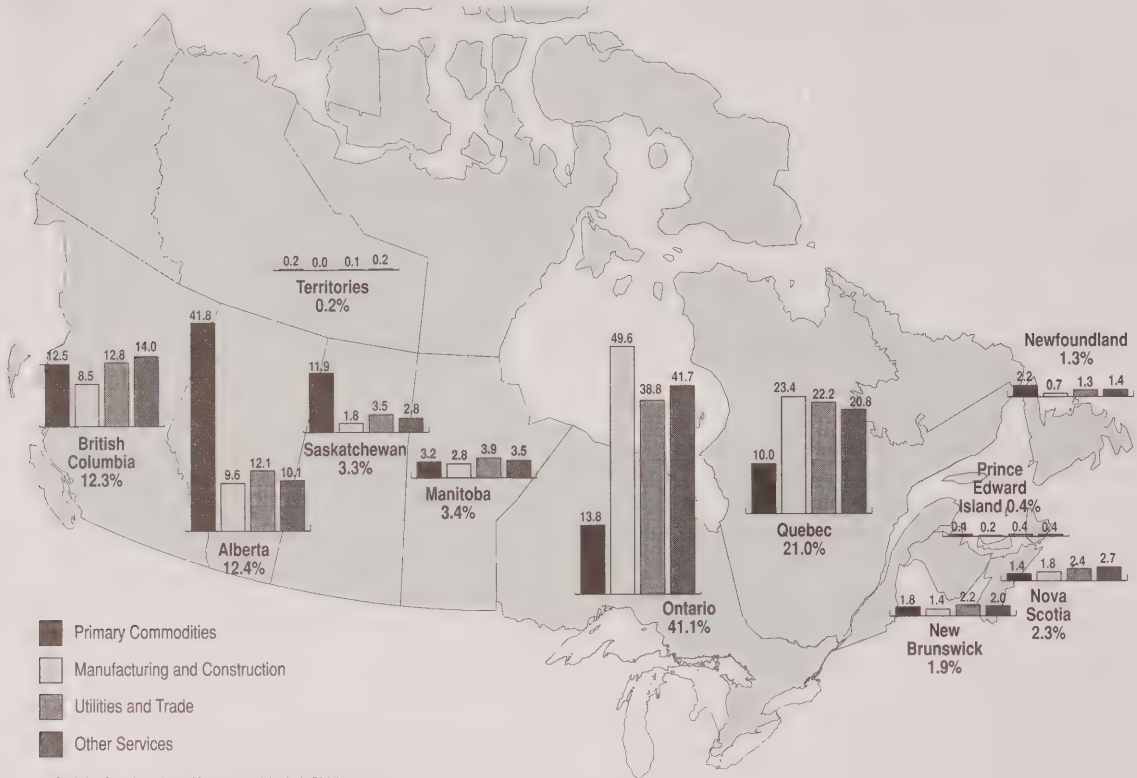
3 Whether made by business or government, "transport investment" can be defined as both new infrastructure construction and purchases of new machinery and equipment. Investment excludes repair and maintenance expenditure, which are expenditures on existing infrastructure, machinery and equipment.

4 Government expenditures refer to government spending on transport, other than investment, the largest component of which is road maintenance. It forms the final component of the traditional economic accounting relative to final domestic demand, where final domestic demand = consumption + investment + government spending.



FIGURE 6-1: PROVINCIAL ECONOMIES AS A PERCENTAGE OF THE CANADIAN ECONOMY, 1998

(Based on value-added in millions of 1992 dollars)



Source: Statistics Canada, Industry Measures and Analysis Division

national gross domestic product (GDP), followed by Quebec at 21 per cent, and British Columbia and Alberta with 12 per cent each. No other province accounts for more than four per cent of Canada's GDP.

In terms of structure, Ontario's economy is dominated by the manufacturing and construction sector (50 per cent) and a disproportionately low share, along with Quebec, of primary commodity production. At 42 per cent, Alberta is the greatest contributor to the primary commodities sector.

In terms of economic growth, Ontario, followed by Quebec, was the prime driver of national growth, largely because both provinces showed strong growth in exporting manufactured goods to the United States. Growth in Alberta was lower, because commodity prices were lower, whereas in British Columbia growth was relatively stagnant following the Asian crisis. Newfoundland posted the highest growth of the small provinces, after the Hibernia project came on line in 1998. Saskatchewan

posted the lowest growth, as a result of the Asian crisis and low commodity prices. Table 6-1 compares the annual growth of the provincial economies in 1997/98.

TABLE 6-1: ANNUAL GROWTH IN PROVINCIAL ECONOMIES, REAL GROSS DOMESTIC PRODUCT, 1998

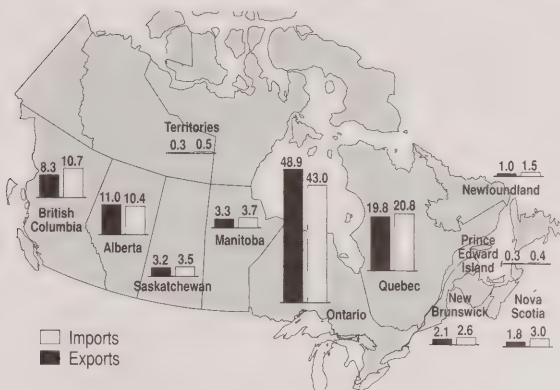
(Based on millions of 1992 dollars)

Province/ Territory	(Per cent)				Total
	Primary Commodities	Manufacturing and Construction	Utilities and Trade	Other Services	
Canada	0.7	2.9	3.7	2.7	2.9
Newfoundland	58.0	9.2	2.6	1.1	6.7
Prince Edward Island	(2.6)	2.0	4.7	1.3	1.9
Nova Scotia	(1.9)	4.7	4.0	1.4	2.4
New Brunswick	(3.2)	0.9	6.1	2.6	2.9
Quebec	3.7	4.8	3.2	1.4	2.8
Ontario	2.0	4.1	5.6	3.4	4.0
Manitoba	7.8	7.1	2.1	2.7	3.6
Saskatchewan	(1.8)	(5.9)	1.4	4.0	0.7
Alberta	(1.7)	(1.0)	3.7	5.1	2.2
British Columbia	1.3	(3.9)	0.2	1.5	0.3
Territories	(9.3)	(13.8)	(3.3)	4.9	0.3

Source: Statistics Canada, Industry Measures and Analysis Division

**FIGURE 6-2: PROVINCIAL EXPORTS AND IMPORTS AS A PERCENTAGE OF THE NATIONAL TOTALS, 1998**

(Based on millions of 1992 dollars)



Source: Statistics Canada, Cat. 13-213-ppb, Provincial Economic Accounts, 1998

In terms of national trade, Ontario predominates, particularly for exports. As Figure 6-2 shows, only Ontario and Alberta among the large provinces enjoyed trade surpluses in 1998, while only Newfoundland among the smaller provinces enjoyed a trade surplus. British Columbia faced a large trade deficit, which reflected the weak demand for primary commodities in Asian markets.

**TABLE 6-2: ANNUAL GROWTH IN EXPORTS AND IMPORTS, 1998**

(Based on millions of 1992 dollars)

Province/Territory	(Per cent)	
	Exports	Imports
Canada	7.1	5.5
Newfoundland	17.9	3.0
Prince Edward Island	7.7	(5.6)
Nova Scotia	7.4	10.5
New Brunswick	4.2	5.3
Quebec	7.0	7.1
Ontario	8.9	6.4
Manitoba	7.4	4.3
Saskatchewan	0.7	0.0
Alberta	5.8	4.6
British Columbia	2.6	1.6
Territories	0.0	4.5

Source: Statistics Canada, Cat. 13-213-ppb, Provincial Economic Accounts, 1998

Table 6-2 shows that Ontario outperformed all other provinces and territories in terms of growth in 1998. Growth was slower in Alberta and particularly in British Columbia. Among the smaller provinces, Newfoundland posted high export growth, again due to Hibernia. Exports grew less than imports in Quebec, New Brunswick, Nova Scotia, and the Territories.

## PROVINCIAL TRANSPORTATION INDUSTRIES

Figure 6-3 shows each province's transportation industries as a percentage of the national totals. In terms of total transportation, the top four provinces — Ontario, Quebec, British Columbia and Alberta — are also the top provinces in terms of relative size of their provincial economies. Ontario is the only province to show a lower share of Canada's transport activities (33 per cent) than that of total economic activities (41 per cent). This can be explained by Ontario's proximity to its key markets (including large US markets), by the low share of primary commodities in its economy, and by its higher population density.

In contrast, British Columbia shows a higher share of total transport activity. Its transport industries accounted for 16.4 per cent of the national total, while its provincial gross domestic product (PGDP) stood at 12.3 per cent of the national GDP. Two reasons for this include its location as a hub for transport to Pacific Rim countries and its unique and challenging topography. Both Alberta<sup>5</sup> and Quebec exhibit shares similar to the size of their respective economies. All the smaller provinces exhibit transport shares higher than PGDP, particularly Manitoba and to a lesser extent New Brunswick. Each of these provinces serves as a base for western and eastern regional transport activities to and from central Canada, respectively.

The figures for provincial trucking as a proportion of national trucking reflect the distribution of total transportation industries. Exceptions are British Columbia at 11.1 per cent, where the lower share of trucking may reflect the mountainous terrain, and Alberta at 16.1 per cent, where the higher share of trucking may compensate for a lack of marine transport.

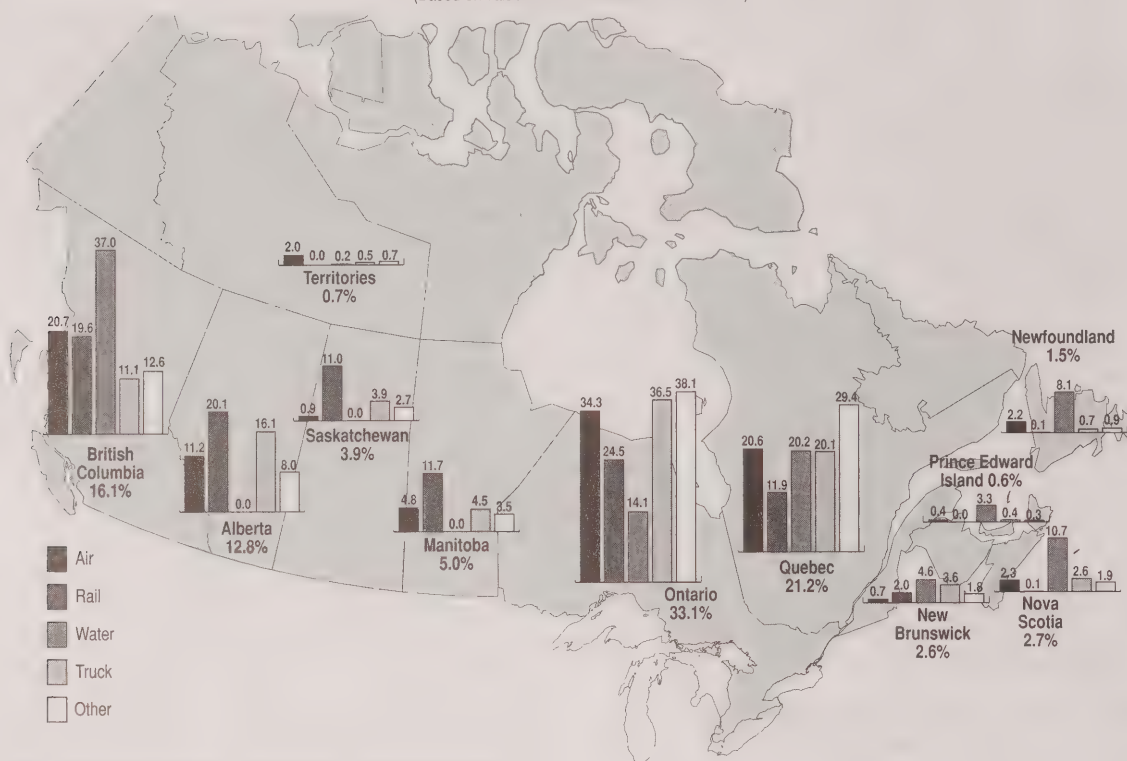
Ontario has the highest provincial share of national rail transportation, followed by the western provinces and Quebec. Manitoba and Saskatchewan have a slightly smaller share. This distribution reflects high production of primary commodities (e.g. wheat and coal) in Western Canada, a more dispersed population, and no direct marine access in the Prairie provinces.

The distribution of marine transportation is driven not so much by provincial economic importance as by access to water. Consequently, British Columbia has the largest share of national water transportation at 37 per cent, followed by Ontario, Quebec and Nova Scotia, which reflects the location of major ports. As expected, the island provinces of Newfoundland and Prince Edward Island also exhibit relatively high shares of marine transportation.

5 The commercial carrier share of the provincial economies in Alberta principally, but also Saskatchewan, considerably underestimates transportation's importance to these provinces because the principal and most valuable primary commodities produced, i.e. oil and natural gas, are generally transported by pipeline. Pipelines are currently not considered transport by Transport Canada but will be considered as such in 2000, with the advent of North American Industrial Classification System.

FIGURE 6-3: PROVINCIAL TRANSPORTATION INDUSTRIES AS A PERCENTAGE OF NATIONAL TRANSPORTATION INDUSTRIES, 1998

(Based on value-added in millions of 1992 dollars)



Source: Statistics Canada, Industry Measures and Analysis Division, Transport Canada Estimates

Air transportation figures show that Ontario ranks highest of all provinces. British Columbia slightly exceeds Quebec, and Alberta ranks similarly to its provincial economy. British Columbia's position is again explained by the difficult terrain, as well as its function as a hub for Pacific Rim countries. In the smaller provinces, the relatively higher share of air transportation in Newfoundland and the territories results largely from their isolated geography.

The amount of other transportation recorded in the provinces is roughly related to their total economic activities. Different policies towards public transit may be reflected in the slightly higher percentages in Quebec and British Columbia, and a slightly lower percentage in Alberta.

## PROVINCIAL GROWTH IN TRANSPORTATION

Table 6-3 shows 1997/98 annual growth in provincial transportation industries for the air, rail, marine, trucking

and "other" modes. Provincial growth in transportation industries was driven primarily by Ontario, where economic growth was served largely by trucking services. In the other larger provinces, transportation growth was below economic growth. British Columbia, Manitoba and New Brunswick each showed a net decline.

TABLE 6-3: ANNUAL GROWTH IN PROVINCIAL TRANSPORTATION INDUSTRIES, 1998

(Based on value-added in millions of 1992 dollars)

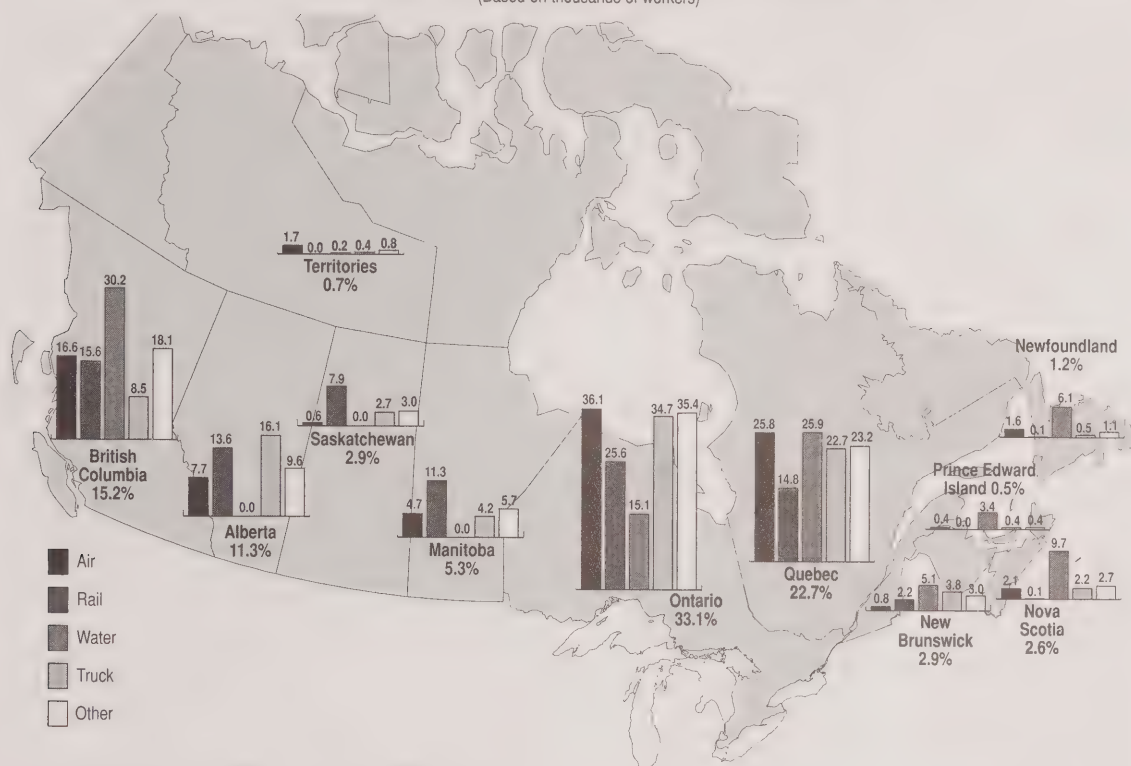
Province/Territory	Total	(Per cent)					GDP
		Air	Rail	Water	Truck	Other	
Canada	1.8	3.5	(2.6)	1.4	4.5	(0.5)	2.9
Newfoundland	3.1	1.8	(14.3)	12.0	(7.3)	(1.8)	6.7
Prince Edward Island	3.4	3.5	0.0	(4.9)	21.7	(1.7)	1.9
Nova Scotia	4.6	(3.1)	(68.4)	17.1	3.7	(1.2)	2.4
New Brunswick	(2.7)	5.2	(1.8)	(4.0)	(3.4)	(1.9)	2.9
Quebec	1.2	6.8	4.6	(1.9)	1.8	(1.6)	2.8
Ontario	4.2	4.3	(3.2)	3.9	8.8	0.5	4.0
Manitoba	(1.1)	7.0	(2.3)	0.0	(3.3)	(0.1)	3.6
Saskatchewan	1.3	3.5	(1.6)	0.0	5.3	(1.1)	0.7
Alberta	3.0	9.2	(5.2)	0.0	7.6	(2.5)	2.2
British Columbia	(1.4)	(2.7)	(2.7)	(1.8)	(0.5)	0.6	0.3
Territories	(8.3)	3.5	0.0	(62.7)	(15.6)	(0.8)	0.3

Source: Statistics Canada, Industry Measures and Analysis Division and Transport Canada estimates



FIGURE 6-4: PROVINCIAL TRANSPORTATION INDUSTRY EMPLOYMENT AS A PERCENTAGE OF NATIONAL TOTALS, 1998

(Based on thousands of workers)



Source: Statistics Canada, Labour Statistics Division, Cat. 72-002-XPB and Transport Canada Estimates

Trucking experienced strong growth due to exports, particularly in Ontario (8.8 per cent) and Alberta (7.8 per cent). In Prince Edward Island, trucking has grown rapidly since the bridge linking the island and the mainland was completed. Trucking declined in British Columbia, and the territories and Newfoundland experienced large declines.

Driven by weak world commodity prices, rail transportation registered declines in all provinces except Quebec.

Marine transportation showed negative growth in British Columbia and Quebec, and positive growth in Ontario. High growth in both Nova Scotia and Newfoundland resulted from increasing imports through Nova Scotia and the Hibernia oil fields in Newfoundland.

Transportation of passengers by air was relatively strong, particularly in Alberta and Quebec. Only British Columbia and Nova Scotia registered declines. Other transportation activities were either stagnant or declined in all provinces. Alberta showed a particularly large drop, which possibly reflects a decrease in the use of public transit.

## EMPLOYMENT IN TRANSPORTATION INDUSTRIES

The indicator for provincial employment in transportation industries in 1998 produces much the same pattern as that provided by the value-added indicators. Figure 6-4 shows that the four largest provinces rank in order of economic size. Ontario exhibits a lower percentage than might be expected from its provincial economy, and British Columbia ranks slightly above the share of its PGDP.

The modal distribution also tracks the pattern of relative shares using the value-added indicators with a few exceptions. For instance a relatively higher employment figure shows up in Quebec for certain modes (air, rail and water), and relatively lower shares are apparent in Saskatchewan for rail and trucking.



## PROVINCIAL GROWTH IN TRANSPORTATION EMPLOYMENT

Growth in transportation employment follows a similar pattern to the growth of value-added for the transportation industries, as shown in Table 6-4. Ontario led in growth with 2.6 per cent, followed by Quebec and Alberta, while British Columbia posted a decline. In the smaller provinces, transportation employment growth was strong in Newfoundland and Prince Edward Island but declined in Nova Scotia and Manitoba.

**TABLE 6-4: ANNUAL GROWTH IN EMPLOYMENT IN THE  
PROVINCIAL TRANSPORTATION INDUSTRY, 1998**

(Based on thousands of workers)

Province/Territory	Transport	Air	(Per cent)			Truck	Other
			Rail	Water			
Newfoundland	8.0	8.2	(14.5)	12.6	(11.1)	(0.5)	
Prince Edward Island	13.6	11.2	0.0	(3.4)	18.0	0.9	
Nova Scotia	(2.5)	(5.7)	(71.2)	7.8	(8.9)	(8.2)	
New Brunswick	0.0	13.6	(0.5)	(2.0)	(5.8)	1.0	
Quebec	1.1	33.9	2.9	16.3	(2.0)	(0.3)	
Ontario	2.6	15.4	(4.4)	8.7	4.9	2.0	
Manitoba	(2.8)	12.5	(3.7)	0.0	(8.3)	0.6	
Saskatchewan	0.8	10.9	(1.1)	0.0	1.9	1.4	
Alberta	0.4	(1.6)	(7.5)	0.0	5.1	(3.9)	
British Columbia	(2.4)	0.0	(6.3)	(4.6)	(7.7)	(1.1)	
Territories	23.1	43.6	0.0	(51.0)	5.7	32.4	
Canada	2.4	11.6	(2.0)	0.0	1.3	2.6	

Source: Statistics Canada, Labour Statistics Division, Cat. 72-002-XPB and Transport Canada Estimates

Specifically, growth in trucking employment was strong in Ontario and Alberta, but declined in British Columbia. Rail employment declined in all provinces except Quebec. Marine employment grew strongly in Quebec and Ontario, did well in Newfoundland and Nova Scotia, but declined in British Columbia, Prince Edward Island and New Brunswick. Growth in air employment was strong in all provinces except Alberta, British Columbia and Nova Scotia. Other transport employment grew strongly in the territories, but growth was low or declined in all the provinces.

## DEMAND FOR TRANSPORTATION

### EXPENDITURES ON TRANSPORTATION

This section explores the demand for transportation by using the third indicator of the relative importance of regional transportation: expenditures on transport-related goods and services. Expenditures include:

- transport-related personal expenditures, e.g. cars
- business and government transport-related investment, e.g. trucks and roads

- government spending on transportation, e.g. road maintenance.

Figure 6-5 presents the distribution of national totals. Ontario accounts for the largest share of national transport demand at 40.7 per cent of the national total, roughly equivalent to the size of its economy. The other large provinces rank roughly in order of the size of their provincial economies, with British Columbia showing a slightly higher share of transport at 12.3 per cent than its economic size alone of 11.3 per cent would suggest. The smaller provinces have a share of total transport demand relatively close to the relative share of their provincial economies. As transport-related personal expenditures represent about two thirds of transport-related demand, the provincial distribution is similar to total transport demand. Appendix 6-1 provides more detail on personal expenditures.

A large proportion of investment in transportation occurs in Ontario. At 46.6 per cent, the share of total transport investment in Ontario is higher than the share of the province's economy in Canada's GDP. The other large provinces follow, in rough order of their economic size, with transport investment in British Columbia and Quebec lower than their share of GDP. In the smaller provinces, Nova Scotia has a slightly higher share in 1998 than would be expected, given the relative size of its provincial economy; and New Brunswick has a slightly lower share. Appendix 6-2 provides more detail on provincial investment.

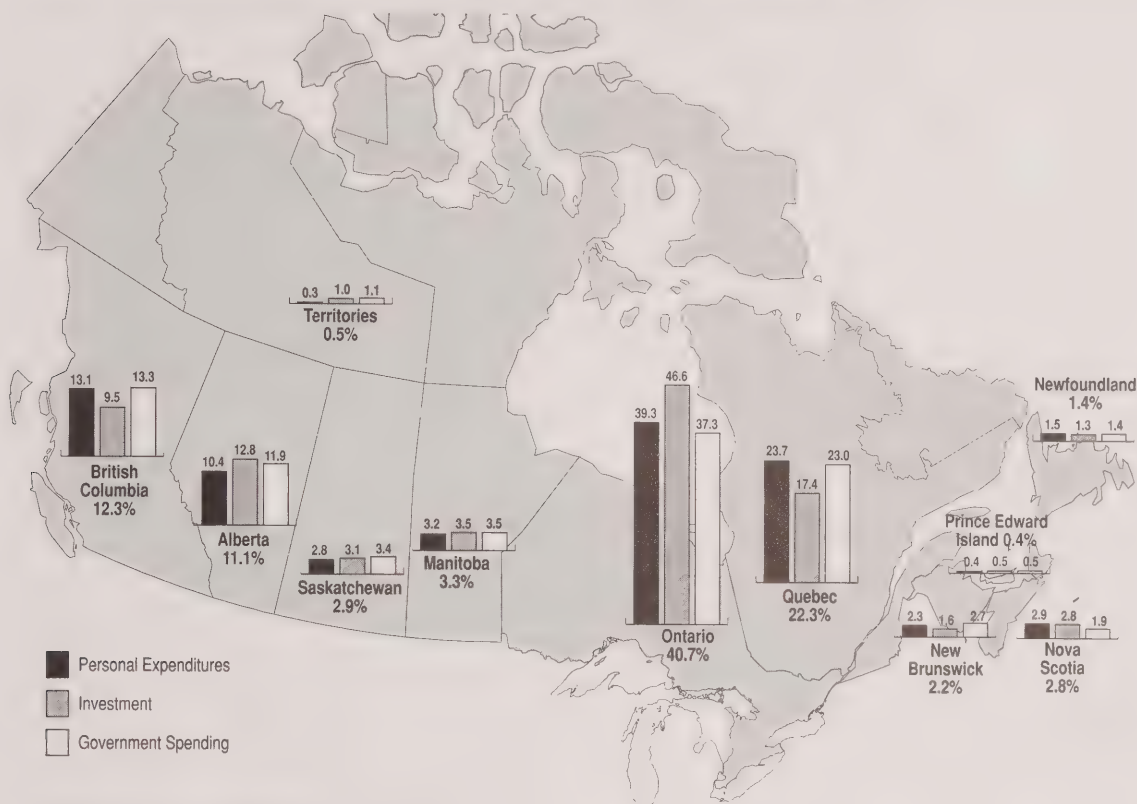
When ranked according to relative shares of national totals, government spending on transportation (primarily on road maintenance) is relatively close to the shares of provincial economic size. Ontario has a relatively lower level, at 37.3 per cent, compared with the size of its economy, along with Alberta, whereas British Columbia shows a relatively higher share. The smaller provinces also rank in rough order of the relative importance of their provincial economies. Higher shares of transport-related government spending occurred in Nova Scotia. More detail on government spending can be found in Chapter 3.

### PROVINCIAL GROWTH IN TRANSPORTATION EXPENDITURES

In terms of growth in total transportation expenditures, national growth was driven largely by Ontario and Alberta, as shown in Table 6-5. In both provinces, growth came primarily from investment. In Quebec, transportation expenditures stayed the same despite declines both in investment and in government spending.

FIGURE 6-5: PROVINCIAL TRANSPORT-RELATED EXPENDITURES AS A PERCENTAGE OF NATIONAL TOTALS, 1998

(Based on millions of 1992 dollars)



Source: Statistics Canada, Income and Expenditures Division and Transport Canada estimates

In British Columbia, negative growth was observed as a result of declines in personal expenditures and investments on transportation.

In the smaller provinces, Newfoundland, Nova Scotia, New Brunswick, and Manitoba and Saskatchewan, growth in transport-related expenditures was relatively small. In Prince Edward Island, Nova Scotia and New Brunswick, declines were observed due to decreasing investment and government spending on transportation.

TABLE 6-5: ANNUAL GROWTH IN PROVINCIAL TRANSPORT-RELATED EXPENDITURES, 1998,

(Based on millions of 1992 dollars)

Province/Territory	(Per Cent)			Total
	Personal Expenditures	Investment	Government Spending	
Canada	2.6	7.6	(2.7)	3.1
Newfoundland	3.7	(5.5)	1.5	1.6
Prince Edward Island	1.6	(20.0)	(4.1)	(5.6)
Nova Scotia	4.2	(10.1)	(18.9)	(1.1)
New Brunswick	4.4	(29.5)	(9.4)	(4.6)
Quebec	2.6	(7.7)	(4.7)	0.0
Ontario	5.2	16.2	(3.6)	6.8
Manitoba	(0.9)	19.2	(6.2)	2.4
Saskatchewan	(2.9)	23.0	(4.4)	1.8
Alberta	1.9	37.5	1.7	8.9
British Columbia	(2.7)	(13.0)	9.0	(3.5)
Territories	(3.4)	0.9	(8.0)	(2.7)

Source: Statistics Canada, Income and Expenditures Division and Transport Canada estimates

**APPENDIX 6-1: TRANSPORT-RELATED DEMAND****APPENDIX 6-1a: TRANSPORT-RELATED EXPENDITURES BY PROVINCE AS PERCENTAGES OF NATIONAL TOTALS, 1998**

(Based on millions of 1992 dollars)

	(Per cent)									
	Personal Expenditures (1)	New and Used Vehicles	Repair and Maintenance Expenditures	Fuels and Lubricants	Purchased Transport	Investment (2)	Infrastructure	Machinery and Equipment	Government Spending (3)	Total Expenditures (1+2+3)
Newfoundland	1.5	1.4	1.3	1.9	1.2	1.3	2.8	0.7	1.4	1.4
Prince Edward Island	0.4	0.3	0.4	0.6	0.2	0.5	1.6	0.1	0.5	0.4
Nova Scotia	2.9	2.8	2.4	3.8	2.4	2.8	3.0	2.8	1.9	2.8
New Brunswick	2.3	2.6	2.1	2.9	1.1	1.6	4.4	0.5	2.7	2.2
Quebec	23.7	24.4	26.1	23.3	18.6	17.4	21.3	15.8	23.0	22.3
Ontario	39.3	40.5	38.4	36.9	40.9	46.6	32.5	52.4	37.3	40.7
Manitoba	3.2	3.1	3.1	3.2	3.2	3.5	4.0	3.2	3.5	3.3
Saskatchewan	2.8	2.7	3.0	3.4	1.9	3.1	2.4	3.4	3.4	2.9
Alberta	10.4	11.2	9.2	10.4	10.1	12.8	8.9	14.4	11.9	11.1
British Columbia	13.1	10.7	13.5	13.2	19.1	9.5	15.8	6.9	13.3	12.3
Territories	0.3	0.2	0.3	0.2	0.9	1.0	3.3	0.0	1.1	0.5

Source: Statistics Canada, Income and Expenditures Division and Transport Canada estimates

**APPENDIX 6-1b: ANNUAL GROWTH IN TRANSPORT-RELATED EXPENDITURES BY PROVINCE IN 1998**

(Based on millions of 1992 dollars)

	(Per cent)									
	Personal Expenditures (1)	New and Used Vehicles	Repair and Maintenance Expenditures	Fuels and Lubricants	Purchased Transport	Investment (2)	Infrastructure	Machinery and Equipment	Government Spending (3)	Total Expenditures (1+2+3)
Canada	2.6	3.0	1.5	3.6	2.0	7.6	2.4	9.9	(2.7)	3.1
Newfoundland	3.7	8.3	0.4	0.7	2.5	(5.5)	27.5	(34.4)	1.5	1.6
Prince Edward Island	1.6	2.2	0.7	2.8	(2.9)	(20.0)	(15.2)	(52.8)	(4.1)	(5.6)
Nova Scotia	4.2	8.5	0.5	2.3	1.7	(10.1)	(10.6)	(9.8)	(18.9)	(1.1)
New Brunswick	4.4	8.3	3.9	0.0	0.5	(29.5)	(20.0)	(51.8)	(9.4)	(4.6)
Quebec	2.6	3.4	1.2	3.0	2.6	(7.7)	5.2	(13.7)	(4.7)	0.0
Ontario	5.2	7.8	2.7	4.4	3.2	16.2	(5.7)	23.6	(3.6)	6.8
Manitoba	(0.9)	(2.9)	(0.9)	1.9	0.9	19.2	18.9	19.3	(6.2)	2.4
Saskatchewan	(2.9)	(8.2)	(2.0)	2.8	3.6	23.0	(4.9)	34.9	(4.4)	1.8
Alberta	1.9	1.4	1.6	3.1	2.3	37.5	17.7	43.7	1.7	8.9
British Columbia	(2.7)	(9.6)	0.3	5.0	(1.5)	(13.0)	16.6	(30.0)	9.0	(3.5)
Territories	(3.4)	(19.3)	(2.7)	0.3	7.5	0.9	9.2	(78.1)	(8.0)	(2.7)

Source: Statistics Canada, Income and Expenditures Division and Transport Canada estimates

## APPENDIX 6-2: TRANSPORT-RELATED INVESTMENT

### PROVINCIAL TRANSPORT-RELATED INVESTMENT AS A PERCENTAGE OF NATIONAL INVESTMENT, 1997

(Based on current dollars)

Transportation Investment	(Per cent)										
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Terr.
Warehouses, Freight Terminals	1.7	1.3	7.2	4.7	16.9	30.1	4.7	2.6	14.1	16.3	0.3
Grain Elevators and Terminals	0.0	0.0	x	0.2	x	x	0.0	x	x	x	x
Maintenance Garages, Equipment Storage, Workshops	1.0	0.3	3.1	5.0	22.3	29.5	3.6	3.5	13.8	12.7	4.9
Railway Shops Engine Houses	0.0	x	x	0.6	5.1	x	0.0	x	x	x	x
Aircraft Hangars	0.6	0.6	x	x	18.5	22.0	x	0.8	19.6	5.9	0.7
Passenger Terminals	1.0	0.7	2.0	0.5	33.1	33.6	2.1	1.9	6.3	17.5	x
<b>Total Building Construction</b>	<b>1.1</b>	<b>0.7</b>	<b>3.6</b>	<b>3.4</b>	<b>21.7</b>	<b>28.4</b>	<b>3.2</b>	<b>2.6</b>	<b>11.8</b>	<b>13.5</b>	<b>x</b>
Marine Engineering Construction	23.9	0.9	3.6	4.6	11.5	31.1	8.8	0.7	2.2	11.7	1.1
Highways, Roads, Streets	2.6	1.0	3.7	x	22.8	37.3	2.8	2.4	7.8	13.4	x
Runways Including Lighting	x	0.4	0.4	0.3	x	40.5	x	x	8.7	x	5.4
Rail Track and Roadbeds, including Signals	0.1	0.0	0.8	1.1	x	39.3	7.7	5.4	11.9	21.9	x
Bridges, Trestles, Overpasses	x	14.4	6.0	17.0	14.7	19.0	5.9	2.4	4.2	13.7	x
Tunnels	0.4	x	0.9	1.3	37.0	26.4	6.6	3.1	7.9	16.7	x
Other Transportation	0.0	1.9	5.8	x	63.5	9.6	x	x	3.8	x	0.0
<b>Total Engineering Construction</b>	<b>3.8</b>	<b>1.9</b>	<b>3.5</b>	<b>5.6</b>	<b>20.5</b>	<b>35.6</b>	<b>3.9</b>	<b>2.5</b>	<b>7.5</b>	<b>14.0</b>	<b>1.0</b>
Industrial Containers	1.3	0.4	2.4	1.1	18.2	37.5	2.4	3.1	22.4	11.0	0.4
Automobiles	0.8	0.1	3.9	0.9	20.9	49.3	2.5	2.0	10.0	9.6	0.1
Buses (All Types)	0.5	0.1	1.5	0.5	35.0	38.9	2.9	1.6	3.0	16.0	0.1
Trucks, Vans, Truck Tractors and Truck Trailers	1.0	0.3	2.4	1.4	16.2	42.9	4.2	5.2	16.3	9.8	0.5
All-Terrain Vehicles	1.1	0.1	x	2.2	27.7	40.9	2.2	1.2	x	14.3	0.2
Locomotives, Rolling Stock, Street and Subway Cars	x	0.0	0.4	1.0	9.4	42.5	6.2	8.1	10.0	21.5	x
Ships and Boats	x	0.4	4.1	3.1	20.3	22.2	1.2	0.4	x	31.0	0.3
Aircraft, Helicopters and Aircraft Engines	1.6	0.3	x	1.6	23.7	43.0	2.6	2.0	11.6	10.5	x
Other Transportation Equipment	1.8	0.0	2.6	1.3	27.4	23.8	9.9	0.4	25.6	7.1	0.0
<b>Total Transportation Equipment</b>	<b>1.1</b>	<b>0.1</b>	<b>3.4</b>	<b>1.1</b>	<b>20.1</b>	<b>46.6</b>	<b>3.0</b>	<b>3.3</b>	<b>11.0</b>	<b>10.8</b>	<b>0.1</b>
<b>TOTAL TRANSPORTATION</b>	<b>1.7</b>	<b>0.5</b>	<b>3.4</b>	<b>2.2</b>	<b>20.3</b>	<b>43.3</b>	<b>3.2</b>	<b>3.1</b>	<b>10.3</b>	<b>11.6</b>	<b>0.4</b>

Note: X indicates that confidential data are suppressed.

Source: Statistics Canada, Cat. 61-223-xib, Capital Expenditures by Type of Asset, 1997





# TRANSPORTATION AND EMPLOYMENT

# 7

*There has been a slight decrease in transportation's proportion of employees in Canada's workforce.  
Trucking continues to employ the largest number, followed by air transportation.*

There were 14.7 million people employed in Canada in 1999. Of this total, 12 million were full-time and 2.7 million were part-time employees. Transportation was an important contributor to the overall employment picture. With almost 828,000 people employed full-time in this sector, transportation accounted for 6.9 per cent of full-time employment in Canada.

This chapter covers three specific areas: first, the workforce, which is the total number of people whose jobs are directly tied to the transportation sector; second, the average annual salary earned by transportation employees; and third, labour relations in the transportation sector.

This report only covers full-time jobs directly associated with transportation. It does not deal with jobs in associated industries, such as manufacturing (vehicles, parts, signs, other transport-related products), the service sector (motels, restaurants, towing services, maintenance of equipment, automobile sales, and other services) or other areas that depend primarily on the transportation sector.

As noted where appropriate throughout this chapter, the overall picture is incomplete in some areas. This is due primarily to a lack of data, usually on a detailed level, which would allow for a better understanding of jobs and functions directly associated with transportation. Timeliness of the availability of data is also a serious issue, as it affects the ability to include current data and related modal comparisons. In most instances, this report does not include "soft" figures, i.e. estimated, derived or unverifiable data. Finally, there have in some cases been changes in jurisdiction — such as the commercialization of ports, airports and air navigation services, and the proliferation of short-line railways — that have led to a change in type or scope of data, which in turn have made historical comparisons difficult.

## WORKFORCE

An estimated 827,922 people worked full-time in the transportation sector in 1999, representing 6.9 per cent of total full-time employment in Canada. This was slightly less than in 1998, when transportation made up seven per cent. In 1997 and 1996, transportation accounted for 7.0 and 7.1 per cent, respectively, while in 1995 an estimated 7.2 per cent of full-time employees were directly associated with the transportation sector.

This report categorizes transportation-related jobs as follows:

- transport services
- transportation infrastructure
- government services tied to transportation
- other associated jobs.

In 1999, transport services accounted for an estimated 614,451 jobs, or 74.2 per cent of the total full-time workforce directly associated with transportation. Related services, such as marine pilotage and tour operators, made up 94,600 jobs (11.4 per cent), while jobs related to the development and maintenance of infrastructure accounted for 85,600 positions (10.4 per cent). Transport-related jobs in the federal and provincial governments accounted for the rest (four per cent).

Keeping in mind that this chapter considers only full-time jobs directly associated with any segment of the industry, the trucking industry is the most important employer in the transportation sector, accounting for 36.5 per cent of all positions. Air transportation is the second largest employer with an estimated 14.2 per cent of all transport jobs.

Table 7-1 compares employment, by category, for the transportation industry.

**TABLE 7-1: TRANSPORTATION EMPLOYMENT BY CATEGORY**

	(Thousands of workers)					
	1990	1995	1996	1997	1998	1999 <sup>a</sup>
<b>Transport Services</b>						
Air <sup>a</sup>	68.2	60.9	61.5	70.2	78.2	84.1
Marine <sup>b</sup>	30.0	32.0	29.5	26.7	26.1	27.9
Rail <sup>c</sup>	50.5	37.9	35.1	34.0	32.4	32.7
Truck <sup>d</sup>	262.1	286.4	294.1	298.0	298.2	302.0
Bus/Urban Transit <sup>e</sup>	69.2	61.0	59.2	61.5	63.2	67.6
Local Services <sup>f</sup>	31.2	34.7	35.5	36.4	37.3	38.2
Other <sup>g</sup>	87.9	69.3	64.9	63.2	62.5	63.2
<b>Total</b>	<b>599.1</b>	<b>582.2</b>	<b>579.8</b>	<b>590.1</b>	<b>597.9</b>	<b>614.4</b>
<b>Transport Infrastructure</b>						
Air <sup>h</sup>	N/A	N/A	N/A	N/A	2.5	2.8
Marine <sup>i</sup>	2.0	1.7	1.7	1.6	1.5	1.5
Rail <sup>j</sup>	18.6	13.8	12.9	12.5	12.6	12.3
Highway <sup>k</sup>	60.0	67.4	68.8	68.9	69.0	69.0
<b>Total</b>	<b>80.6</b>	<b>82.9</b>	<b>83.4</b>	<b>83.0</b>	<b>85.6</b>	<b>85.6</b>
<b>Government Services<sup>l</sup></b>	<b>42.7</b>	<b>40.4</b>	<b>32.5</b>	<b>28.7</b>	<b>28.0</b>	<b>27.9</b>
<b>Associated Services</b>						
Air <sup>m</sup>	22.2	31.1	29.5	30.5	30.5	31.2
Marine <sup>n</sup>	8.2	8.0	6.9	7.0	6.8	6.7
Other services <sup>o</sup>	47.4	50.7	50.1	53.3	53.2	53.2
<b>Total</b>	<b>82.8</b>	<b>91.5</b>	<b>89.0</b>	<b>93.0</b>	<b>93.9</b>	<b>94.6</b>
<b>Grand Total<sup>p</sup></b>	<b>805.2</b>	<b>797.0</b>	<b>784.7</b>	<b>794.7</b>	<b>811.2</b>	<b>827.9</b>

Note: Due to confidential data that has only been included in Totals or the Grand Total, the individual sections do not necessarily add to the sums shown in the table.

e: Transport Canada estimate N/A: not available

**Sources:**

- A 1999 based on twelve months of averaged annual data. Statistics Canada Survey of Employment, Payrolls and Hours (SEPH)  
 B Statistics Canada, SEPH. 1999 based on 12 months of averaged annual data  
 C Transport Canada estimates based on Statistics Canada Cat. 52-216  
 D Statistics Canada Cat. 53-222-XPB, SEPH, Transport Canada  
 E Statistics Canada Cat. 53-215, Transport Canada  
 F Transport Canada estimates based on 1991 & 1996 Census data  
 G Public Transit residual, Other Transportation residual, Pipeline Transportation. SEPH  
 H Canadian Airport Authorities, Local Airport Authorities, Transport Canada  
 I St. Lawrence Seaway Management Corp., Canadian Port Authorities  
 J Transport Canada estimates based on Statistics Canada Cat. 52-216  
 K Transport Canada estimates based on 1986, 1991, 1996 Census data  
 L Government Estimates, Transport Canada estimates for provincial and territorial employment  
 M Statistics Canada, SEPH – Travel Services  
 N Pilotage Authorities, BCMEA, MEA  
 O Insurance Bureau of Canada, Census  
 P Excludes part-time employees

The estimated number of people involved in the provision of rail transportation services dropped significantly in all job categories between 1990 and 1998 (36 per cent). Equipment maintenance workers were the most affected, with a 47 per cent decrease.<sup>2</sup> Contracting out may have contributed to some portion of the recent declines, but the number of employees associated with contract work is not known at the time of writing. In 1998, there was a 4.5 per cent decline in total personnel employed in rail transport services, incurred entirely by the Class I carriers.

Table 7-2 shows employment in rail transportation services, for Class I, II and III carriers, since 1990.<sup>3</sup>

**TABLE 7-2: EMPLOYMENT BY RAIL TRANSPORT SERVICES**

	Total Rail <sup>1</sup>	Transport Services	Per cent of total <sup>2</sup>	Class I	Class II and III
<b>1990</b>					
General <sup>3</sup>		8,457		7,685	772
Transportation		23,598		20,819	2,779
Equipment maintenance		18,477		16,618	1,859
<b>Total</b>	<b>69,119</b>	<b>50,532</b>	<b>73.1</b>	<b>45,122</b>	<b>5,410</b>
<b>1995</b>					
General <sup>3</sup>		6,801		6,236	565
Transportation		19,719		17,676	2,043
Equipment maintenance		11,405		10,243	1,162
<b>Total</b>	<b>51,754</b>	<b>37,925</b>	<b>73.3</b>	<b>34,155</b>	<b>3,770</b>
<b>1996</b>					
General <sup>3</sup>		6,013		5,477	536
Transportation		18,206		16,225	1,981
Equipment maintenance		10,886		9,757	1,129
<b>Total</b>	<b>48,038</b>	<b>35,105</b>	<b>73.1</b>	<b>31,459</b>	<b>3,646</b>
<b>1997</b>					
General <sup>3</sup>		5,783		5,288	495
Transportation		17,698		15,684	2,014
Equipment maintenance		10,477		9,352	1,125
<b>Total</b>	<b>46,493</b>	<b>33,958</b>	<b>73.0</b>	<b>30,324</b>	<b>3,634</b>
<b>1998<sup>4</sup></b>					
General <sup>3</sup>		5,768		5,298	470
Transportation		16,774		14,708	2,066
Equipment maintenance		9,871		8,774	1,097
<b>Total</b>	<b>44,979</b>	<b>32,413</b>	<b>72.1</b>	<b>28,780</b>	<b>3,633</b>

1 Total Rail employment limited to carrier personnel, does not include incidental rail services.

2 Total transport service as a percentage of total rail carrier employment.

3 Estimated number of managerial and administrative personnel allocated to transport services.

4 Data for 1998 may be understated due to exclusion of a number of small Class III railways.

Source: Statistics Canada, Cat. 53-216, Transport Canada estimates.

## TRANSPORT SERVICES

### RAIL

The numbers for personnel involved in the direct provision of rail transport services include engineers, conductors and workers who carry out equipment maintenance, as well as an estimate of carrier managerial and administration staff allocated to transportation services.<sup>1</sup>

### TRUCKING

#### Medium and Large For-Hire Trucking Firms

In 1998, medium and large for-hire trucking firms<sup>4</sup> employed an estimated 31 per cent of all personnel engaged

1 1998 is the most recent year for which this level of information is available.

2 A large part of this decline occurred between 1993 and 1995 as a result of the industry's labour reduction program, including the sale of CN subsidiary AMF Technotransport, which had previously been included in CN's Canadian Rail Operations.

3 Rail data in Table 7-1 includes Class III carriers and jobs related to incidental services.

4 Includes all Canadian-domiciled for-hire companies that reported \$1 million or more in operating revenues for the year under consideration.

in trucking activity in Canada. The total number of employees grew by 0.8 per cent from 1997 levels. The number of company drivers increased by 2.9 per cent, while the number of "other" employees dropped by 1.8 per cent. The number of "other employees" has been fluctuating since 1995, which may be a function of the survey rather than a representation of actual industry trends.

Since 1991, company drivers have accounted for approximately 57 per cent of all company employees in medium and large for-hire firms. This trend held true in 1998, with drivers making up 57.1 per cent of all employees. The range varied from a low of 55.7 per cent in 1995 to a high of 58.2 per cent in 1996.

Table 7-3 shows employment levels at medium and large for-hire firms for the period 1991 to 1998.

Ontario firms continue to employ the largest proportion of drivers in Canada, accounting for 40 per cent of all drivers for large for-hire carriers in 1998. Firms in the Prairie Provinces and Quebec accounted for 24 and 21 per cent, respectively, of all drivers for medium to large for-hire companies. The total number of employees increased in all regions except British Columbia and the Territories.

**TABLE 7-3: EMPLOYMENT BY FOR-HIRE TRUCKING FIRMS<sup>1</sup>**

	Company drivers	Other employees <sup>2</sup>	Total employees
1991	41,725	30,892	72,617
1995	50,323	39,963	90,286
1996 <sup>3</sup>	51,833	37,182	89,015
1997 <sup>3</sup>	51,256	40,397	91,653
1998 <sup>3</sup>	52,739	39,685	92,424

1 Includes Canadian-domiciled for-hire carriers with annual revenues of \$1 million or more.

2 Maintenance, garage, terminal and other employees.

3 Annual figures are an average of quarterly data for each year.

Source: Statistics Canada, Cat. 53-222-XPB

Table 7-4 compares employment, by region, for the trucking industry.

### Small For-Hire Carriers

In 1997, the number of full-time employees associated with small for-hire carriers<sup>5</sup> decreased by 2.7 per cent from 1996. While there were large drops in Quebec (26 per cent) and Ontario (13 per cent), all other regions saw increases: Atlantic, 14.6 per cent; Prairie Provinces, 40 per cent; and British Columbia, 6.3 per cent.

Table 7.4 shows the number of full and part-time workers employed by the small for-hire trucking industry in Canada.

**TABLE 7-4: EMPLOYMENT BY REGION, TRUCKING INDUSTRY**

	Canada	Atlantic Region	Quebec	Ontario	Prairie Provinces	British Columbia	Territories
<b>Employment by Medium and Large For-Hire Firms<sup>1</sup></b>							
1997 Company drivers	51,256	3,100	10,519	20,779	12,520	4,338	N/A
Other company employees	40,397	3,467	6,858	17,209	9,728	3,135	N/A
Total company employees	91,653	6,567	17,377	37,988	22,248	7,473	N/A
1998 Company drivers	52,739	3,132	11,989	20,793	12,854	3,971	N/A
Other company employees	39,685	3,907	7,295	16,626	9,120	2,737	N/A
Total company employees	92,424	7,039	19,284	37,420	21,974	6,708	N/A
<b>Employment by small For-Hire Trucking Firms<sup>2</sup></b>							
1996 Full-time	26,353	1,667	9,586	6,044	5,293	3,733	30
Part-time	9,401	779	2,917	2,607	1,636	1,446	16
1997 <sup>3</sup> Full-time	25,624	1,911	7,065	5,265	7,415	3,968	N/A
Part-time	9,409	796	1,805	2,429	2,837	1,542	N/A
<b>Employment by private carriers</b>							
1997 Highway drivers	4,379	133	1,007	2,364	533	342	N/A
Local drivers	8,001	433	2,297	2,897	1,257	1,117	N/A
Other employees	5,212	154	1,596	2,326	469	667	N/A
Total	17,592	720	4,900	7,587	2,259	2,126	N/A
1998 Highway drivers	4,014	184	1,085	2,054	546	145	N/A
Local drivers	5,923	232	1,606	2,885	813	387	N/A
Other employees	3,285	138	1,018	1,484	330	315	N/A
Total	13,222	554	3,709	6,423	1,689	847	N/A
<b>Full-time employees: Owner Operators<sup>2</sup></b>							
1996	61,377	4,684	10,266	17,492	16,256	12,592	86
1997	64,235	5,687	12,566	18,556	17,983	9,310	N/A

1 British Columbia includes employment figures for the Territories.

2 1998 data not available.

Source: Statistics Canada, Cat. 53-222-XPB

5 Small for-hire carriers include Canadian-based companies with operating revenues greater than or equal to \$30,000 and less than \$1 million. 1997 is the most current year for available data.



## Private Carriers

In 1998, there were 396 private carriers<sup>6</sup> reporting in Canada, down from 422 in 1997. The number of employees reported by these carriers also decreased substantially, down 25 per cent. The number of highway drivers decreased by eight per cent, while local drivers and "other" employees dropped by 26 and 37 per cent, respectively. The figures indicate that a number of the private carriers that did not report in 1998 were involved extensively in local operations.

In terms of proportional decline, British Columbia and the Territories had the largest decrease in the number of personnel employed by private companies, at 60 per cent. The number of employees in the Prairie Provinces, Quebec and Atlantic Region decreased by 25, 24 and 23 per cent, respectively. Ontario saw a decline of 15 per cent.

Table 7-4 shows total employment by private trucking carriers for 1997 and 1998.

## Owner-Operators

In 1997, 40,000 owner-operators employed 64,235 full-time employees. The largest proportion (29 per cent) was in Ontario. Owner-operators in the Prairie Provinces were the next largest group, with 28 per cent of the total employees. Quebec, British Columbia and the Atlantic Region accounted for 20, 14.5 and 8.5 per cent, respectively.

Table 7-4 shows the number of full-time employees associated with owner-operators for 1996 and 1997.<sup>7</sup>

## Total Trucking Employment

Total full-time employment in the trucking industry increased by 1.2 per cent in 1997. While actual data for a number of components of the industry for 1998 and 1999 are not available, estimates indicate that the workforce was stable in 1998 and saw a small increase of about one per cent in 1999. Employment by medium and large for-hire carriers increased slightly in 1998 (0.8 per cent), while the number of people employed by private carriers appears to have decreased significantly.

Table 7-5 compares employment, by sector, in the trucking industry from 1991 to 1998.<sup>8</sup>

TABLE 7-5: TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY

	Medium / Large For-Hire <sup>1</sup>	Small For-Hire <sup>2</sup>	Private <sup>3</sup>	Owner- Operator <sup>4</sup>	Sub- total	Delivery Drivers <sup>5</sup>	Total
1991	72,617	27,355	27,184	52,000	179,156	90,310	269,466
1995	90,286	32,388	20,242	57,335	200,251	95,940	296,191
1996	89,015	35,754	19,993	61,377	206,139	97,400	303,539
1997	91,653	35,033	17,592	64,235	208,513	98,900	307,413
1998	92,424	N/A	13,222	N/A	N/A	N/A	N/A

<sup>1</sup> Includes Canadian-domiciled for-hire carriers with annual operating revenues of \$1 million or more.

<sup>2</sup> Includes Canadian-domiciled for-hire carriers with annual operating revenues greater than \$25,000 and less than \$1 million. Estimated for 1991. Includes part-time employees.

<sup>3</sup> Includes Canadian-domiciled private carriers with annual operating expenses of \$1 million or more. Estimated for 1991.

<sup>4</sup> Estimated value for 1991.

<sup>5</sup> Based on 1991 and 1996 Census data; estimated values for 1995 and 1997.

Sources: Statistics Canada, Cat. 53-222-XPB, SEPH and Transport Canada

## Bus

Employment figures for large<sup>9</sup> intercity and school bus operators appear to have shifted significantly between 1997 and 1998. In 1998, 14 large intercity carriers reported 1,206 full-time employees.<sup>10</sup> This was a 60 per cent decrease from the 2,960 full-time employees reported by 15 large intercity bus companies in 1997.<sup>11</sup> Conversely, 91 large school bus companies reported 22,192 full-time employees in 1998,<sup>12</sup> a 19 per cent increase if compared with the 81 large companies that reported in 1997.<sup>13</sup>

Employment figures in the charter and other bus industry also appear to be somewhat unstable, with a 15 per cent decline in 1997 followed by a 22 per cent increase in 1998. In 1996, employment appeared to have increased by 39 per cent from 1995. While only two years of employment information are available for the shuttle services sector, the data also appears unstable, with a 21 per cent decrease being reported for 1998.

In 1998, 62 urban transit companies reported a full-time compliment of just under 36,000 employees. This was 1.7 per cent below employment levels reported for 1997. Between 1990 and 1998, the number of full-time employees in this sector decreased by five per cent.

6 Data limited to Canadian-based carriers with annual operating expenses of \$1 million or more.

7 1997 is the most recent year for which data is available.

8 Threshold changes were made in the trucking surveys in 1990, therefore the time-series shown starts at 1991.

9 Companies with annual revenues of \$2 million or more.

10 There were 16 additional carriers with annual revenues between \$200,000 and \$2 million that did not report employment data.

11 There were 13 additional carriers with annual revenues between \$200,000 and \$2 million that did not report employment data.

12 There were 722 additional companies with annual revenues between \$200,000 and \$2 million that did not report employment data.

13 There were 580 additional companies with annual revenues between \$200,000 and \$2 million that did not report employment data.

These apparent shifts in the employment numbers can be explained by a number of factors. Since the mid-1990s, the industry has gone through a period of consolidation, mergers and acquisitions. In addition, starting in 1997, data for the bus industry has been reported according to the North American Industrial Classification System (NAICS). Under NAICS, companies are classified by industry according to their main activity, which may change from year to year. For example, in 1996 there were 43 companies reporting under SIC 4572 (Scheduled Intercity Bus Industry). Under NAICS there would have been only 29. Also, because the bus industry has become more dynamic over recent years, companies are involved in more than one sector (e.g. intercity, school bus, charter and shuttle activities).

Table 7-6 shows full-time employment figures for the bus industry for the period 1990 to 1998.

**TABLE 7-6: FULL-TIME EMPLOYEES IN THE BUS INDUSTRY<sup>1</sup>**

	1990	1995	1996	1997	1998
<b>Intercity Operators</b>					
Drivers	2,457	1,643	1,419	1,446	690
Mechanics	591	242	149	145	60
Other	2,062	1,660	1,571	1,369	456
Total	5,110	3,545	3,139	2,960	1,206
<b>School Bus Operators</b>					
Drivers	20,544	15,007	13,638	16,370	18,879
Mechanics	1,198	820	780	861	990
Other	1,553	1,663	1,398	1,478	2,323
Total	23,295	17,490	15,816	18,709	22,192
<b>Charter and Other</b>					
Drivers	2,218	1,720	2,431	2,184	2,628
Mechanics	215	214	219	190	287
Other	390	508	740	502	600
Total	2,823	2,442	3,390	2,876	3,515
<b>Shuttle Services<sup>2</sup></b>					
Drivers				402	338
Mechanics				30	13
Other				74	49
Total	N/A	N/A	N/A	506	400
<b>Urban Transit</b>					
General and administration	3,810	4,160	4,114	4,014	3,344
Transport operations	23,884	25,447	22,807	22,474	22,697
Vehicle maintenance	10,248	7,888	9,931	9,990	9,826
Total	37,942	37,494	36,852	36,478	35,867
<b>Total Full-time employees<sup>3</sup></b>	<b>69,170</b>	<b>60,971</b>	<b>59,197</b>	<b>61,529</b>	<b>63,180</b>

1 1990 includes full-time employees of companies with annual operating revenues of \$500,000 or more; 1995-1998 inclusive includes full-time workers of companies with annual revenues greater than \$2 million.

2 Data not available prior to 1997.

3 Employment data not available for "Scenic and Sightseeing Transportation" by bus.

Source: Statistics Canada, Cat. 53-215 XPB

## TAXI AND LIMOUSINE SERVICES

According to census data, there were 35,490 taxi and limousine drivers in Canada in 1996, an 18 per cent increase from 1986 levels. Three provinces accounted for 76 per cent of all taxi and limousine drivers employed in Canada during 1996. Ontario accounted for 40 per cent of drivers, an increase of 27 per cent from 1986 levels. Quebec employed 24 per cent, up ten per cent from 1986, while British Columbia employed 12 per cent, up 16 per cent.<sup>14</sup>

## MARINE

Average annual employment in the water transport industry, including services incidental to water transportation, increased by seven per cent in 1999 over 1998 levels<sup>15</sup>. Historically, employment has declined by 13 per cent since 1995.

In 1999, 42 per cent of all people working in the water transport industry, not including services incidental to water transport, were located in British Columbia. The Atlantic Region accounted for another 18 per cent, while Ontario and Quebec accounted for 16 and 15 per cent, respectively.

Ferry operations account for a large proportion of employment in the marine transport services sector, generating about two thirds of all transportation jobs provided by Canadian-based carriers.

Table 7-7 shows average annual employment in the water transport sector, by region.

**TABLE 7-7: AVERAGE ANNUAL EMPLOYMENT IN THE WATER TRANSPORT INDUSTRY**

	1990	1995	1996	1997	1998	1999
Atlantic Region <sup>1</sup>	3,767	N/A	3,482	3,461	3,945	4,240 <sup>3</sup>
Quebec <sup>1</sup>	2,891	3,546	3,068	2,516	2,268	2,463
Ontario <sup>1</sup>	4,062	3,649	2,883	2,361	2,463	2,707
British Columbia <sup>1</sup>	5,751	7,331	8,073	7,554	6,669	6,929
Other Regions <sup>1</sup>	495	N/A	276	248	169	151
Canada <sup>1</sup>	16,966	18,131	17,782	16,140	15,514	16,490
Total <sup>2</sup>	30,028	32,020	29,517	26,726	26,097	27,911

Note: Figures for period are based on 12 months annual weighted data.

1 Does not include incidental services.

2 Includes incidental services.

3 1999 figure for Atlantic Region includes estimates by Transport Canada of marine employees not engaged in marine incidental services who are located in the provinces of Newfoundland and Prince Edward Island.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours (SEPH)

14 Estimates for this sector have been included in the aggregate figures for 1997, 1998 and 1999. Actual updated numbers will not be available until the next Census in 2001.

15 Detailed carrier level employment data, as reported in the 1998 report, are no longer available.

## AIR

After a decline from 1990 to 1995, employment in the air industry has grown by 38 per cent between 1995 and 1999. The last two years saw significant increases: in 1998 and 1999 total employment grew over 11 and seven per cent, respectively.

Following a significant decline between 1990 and 1995, total employment by Levels I-III air carriers exceeded 1990 levels in 1998.<sup>16</sup> There were increases in all employment categories. The number of pilots and copilots and other flight personnel increased by ten per cent. Management and administration personnel grew by 11 per cent, and the number of other carrier personnel increased by just over nine per cent. Employment by Level IV carriers increased by 25 per cent between 1997 and 1998.

Table 7-8 compares Level I-IV air carrier employment levels with that of the total air industry.

**TABLE 7-8: EMPLOYMENT IN THE AIR INDUSTRY**

	1990	1995	1996	1997	1998	1999
Pilots and Copilots	6,080	6,295	6,478	6,549	7,205	N/A
Other Flight Personnel	8,691	8,010	8,593	9,126	10,054	N/A
Management and Admin.	3,467	3,590	3,523	3,631	4,022	N/A
Other Carrier Personnel	33,738	28,408	28,411	29,200	31,831	N/A
Total Levels I-III <sup>1</sup>	51,976	46,303	47,005	48,506	53,112	N/A
Total Level IV <sup>2</sup>	4,355	4,077	4,537	4,361	5,456	N/A
Total Levels I-IV	56,331	50,380	51,542	52,867	58,568	N/A
Total, Including Incidental Services <sup>3</sup>	68,194	60,870	61,475	70,232	78,223	84,058

1 Canadian air carriers that in each of the two calendar years immediately preceding the report year transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

2 Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of less than \$500,000 for air services for which the air carrier had a licence.

3 Incidental services: jobs that are associated with the air industry but are not defined in Statistics Canada, Cat. 72-002.

Source: Statistics Canada, Cat. 51-206-XPB and Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

## OTHER

The "other" public passenger transit employment figures shown in Table 7-9 refer to personnel employed by public transit companies not included in the Statistics Canada bus surveys referred to earlier in this section,<sup>17</sup> as well as people directly employed by services incidental to the bus industry. A significant drop in employment was noted between 1990 and 1995. Since then, however, the number of jobs has slowly increased. Based on the first six months of available data, there was a seven per cent increase in employment in 1999 from 1998.

16 Data for 1999 are not available at this level of disaggregation.

17 Intercity, school, charter and other, shuttle and urban transit bus companies, with annual operating revenues greater than \$2 million.

18 The number of taxi and limousine drivers discussed earlier has been subtracted from the total number of "other" transportation jobs recorded by Statistics Canada's Survey of Employment, Payrolls and Hours.

The number of personnel employed in "other transportation" jobs has been steadily decreasing since 1990.<sup>18</sup>

The number of people employed by the "pipeline transportation" sector has also been slowly decreasing since 1990, with a further 2.5 per cent decline during 1999. A number of these jobs are probably associated with the development and maintenance of the pipeline infrastructure, and as such should be reported in the following section. It is impossible, however, with any level of accuracy, to disaggregate the numbers to that level of detail.

**TABLE 7-9: OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT**

	1990	1995	1996	1997	1998	1999
"Other" Public Passenger Transit	22,894	15,634	18,321	16,666	17,216	18,424 <sup>1</sup>
"Other" Transportation	56,022	45,785	39,562	39,514	38,687	38,440 <sup>1</sup>
Pipeline Transportation	8,967	7,885	7,005	7,027	6,590	6,419
<b>Total</b>	<b>87,883</b>	<b>69,304</b>	<b>64,888</b>	<b>63,207</b>	<b>62,493</b>	<b>63,283</b>

Source: Statistics Canada, Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

## DATA GAPS

A number of data gaps exist in transport services. In air, no employment data is captured for Level V and VI carriers, or private and general aviation activity. There are no numbers available for jobs in Canada related to foreign carriers operating to/from this country. In the marine area, there are no figures associated with shipping conferences operating in Canada.

## TRANSPORT INFRASTRUCTURE

This section refers to personnel employed at harbours, airports, ports and other transport-related facilities. It also includes personnel dedicated entirely to the construction and maintenance of transport infrastructure, such as rail right-of-way, roads and highways.

## RAIL

The number of road maintenance workers employed by both Class I and Class II rail carriers decreased by 33 per cent since 1990. If the estimated number of



managerial and administration staff are included, employees dedicated to rail infrastructure declined by 34 per cent for Class I carriers and 32 per cent for Class II carriers.

Table 7-10 compares the number of people employed in rail infrastructure services by Class I and II rail carriers between 1990 and 1998.

**TABLE 7-10: EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES**

	Total Rail <sup>1</sup>	Infrastructure Services	Per cent of total <sup>2</sup>	Class I	Class II
<b>1990</b>					
General <sup>3</sup>		2,875		2,499	376
Road maintenance		15,712		13,456	2,256
Total	69,119	18,587	26.9	15,955	2,632
<b>1995</b>					
General <sup>3</sup>		2,274		1,999	275
Road maintenance		11,555		9,999	1,556
Total	51,754	13,829	26.7	11,998	1,831
<b>1996</b>					
General <sup>3</sup>		2,041		1,782	259
Road maintenance		10,892		9,392	1,500
Total	48,038	12,933	26.9	11,174	1,759
<b>1997</b>					
General <sup>3</sup>		1,964		1,726	238
Road maintenance		10,571		9,064	1,507
Total	46,493	12,535	27.0	10,790	1,745
<b>1998</b>					
General <sup>3</sup>		2,049		1,825	224
Road maintenance		10,517		9,010	1,507
Total	44,979	12,566	27.9	10,835	1,731

1 Total Rail employment limited to carrier personnel, does not include incidental services.

2 Total employment by infrastructure services as a percentage of total rail carrier employment.

3 Estimated number of management and administrative personnel allocated to rail infrastructure development and maintenance.

Source: Statistics Canada, Cat. 53-216; Transport Canada

## HIGHWAYS

There is no definitive source for determining the number of people employed in the construction and maintenance of highways in Canada. In addition, this is an industry influenced by economic and seasonal factors among others. The employment data in this report are derived from census data for the industry classification "Highways and Heavy Construction." Actual data was available for 1986, 1991 and 1996. Estimates for intervening years are derived from average annual growth between 1991 and 1996.

There were 68,820 people employed under this classification in 1996. On the assumption that post 1996 employment grew at the same rate as government expenditures on road construction and maintenance (0.3 per cent) between 1996 and 1999, there were an estimated 69,026 people employed under this category in 1999.

## MARINE

### Ports

There were 921 full-time personnel employed by the Canadian Port Authorities<sup>19</sup> (CPA) in 1999, compared with 879 by the same group of ports in 1998. The number of part-time workers remained stable, whereas the number of contract workers increased from 56 in 1998 to 85 in 1999.

Table 7-11 shows total employment, by category, by the Port Authorities in 1998 and 1999.

**TABLE 7-11: EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 and 1999**

	Year	Management	Administration	Other	Total
Total employees	<b>1999</b>	215	346	694	1,255
	1998	219	315	647	1,238
Full-time	<b>1999</b>	208	303	411	921
	1998	209	265	405	879
Part-time	<b>1999</b>	1	34	214	249
	1998	5	39	202	246
Contract	<b>1999</b>	6	9	69	85
	1998	5	11	40	56

Note: Totals do not equal sum of parts, as some ports did not provide detailed breakdowns.

Source: Canadian Port Authorities

Employment numbers in the summary table (Table 7-1) at the beginning of this chapter include employment data for Canadian Ports Corporation (CPC) facilities for the period 1990 to 1997. As such, the time-series does not refer to the same set of ports. It is, however, a good indicator of the number of full-time personnel at Canada's major ports over the reference period.

### St. Lawrence Seaway Management Corporation

The number of full-time positions at the St. Lawrence Seaway Management Corporation (SLSMC) decreased by 8 per cent in 1999, as compared with the number of employees reported by its predecessor, the St. Lawrence Seaway Authority (SLSA), in December 1998. Decreases occurred in all categories, with the largest proportional decrease (27 per cent) in management. The numbers of administration and operations staff each decreased by less than 10 per cent.

Table 7-12 summarizes total employment levels at the SLSMC and SLSA between 1995 and 1999.

19 Fraser River, Halifax, Hamilton, Montreal, Nanaimo, North Fraser, Port Alberni, Prince Rupert, Quebec City, Saguenay, Saint John, Sept-Îles, St. John's, Thunder Bay, Toronto, Trois-Rivières, Vancouver, Windsor.



**TABLE 7-12: EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1998 – 1999**

	1995 <sup>1</sup>	1996	1997	1998 <sup>2</sup>	1999 <sup>3</sup>
Management	N/A	13	12	15	11
Administration	N/A	86	84	70	65
Operations	N/A	611	591	540	498
<b>Total</b>	<b>739</b>	<b>710</b>	<b>687</b>	<b>625</b>	<b>574</b>
Temporary	N/A	34	49	33	49

<sup>1</sup> Number of permanent positions as of March, 1995.

<sup>2</sup> As of December 31, 1998 — St. Lawrence Seaway Authority.

<sup>3</sup> As of September, 1999 — St. Lawrence Seaway Management Corporation.

Source: St. Lawrence Seaway Management Corporation

## AIR

In 1999, there were an estimated 2,547 full-time people employed at Canadian Airport Authorities (CAAs) and Local Airport Authorities (LAAs) in the National Airport System (NAS). There were also 292 Transport Canada employees in transit to CAAs.<sup>20</sup> Combined, the 2,839 people working at NAS airports accounted for an estimated 12 per cent increase over the number of employees reported in 1998. NAS airports handled over 90 per cent of the passenger activity at Canada's airports in 1999.

Table 7-13 shows available employment data for Canada's NAS airports in 1999.

**TABLE 7-13: EMPLOYMENT – NAS AIRPORTS, 1999**

CAA/LAA	Transport Canada Employees In-transit to NAS Airports	Total
Atlantic <sup>1</sup>	135	206
Central <sup>2</sup>	1,511	60
Western <sup>3</sup>	855	26
Territories <sup>4</sup>	46	0
<b>Total</b>	<b>2,547</b>	<b>292</b>

<sup>1</sup> Atlantic: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick.

<sup>2</sup> Central: Ontario, Quebec.

<sup>3</sup> Western: Manitoba, Saskatchewan, Alberta, British Columbia.

<sup>4</sup> Territories: Yukon, Nunavut, Northwest Territories.

Source: CAAs, LAAs, Transport Canada

## DATA GAPS IN TRANSPORTATION INFRASTRUCTURE

Numerous gaps exist in the reporting of transportation infrastructure data. Some employment figures are not captured or are impossible to break out from more aggregate information. With airports, for example, employment at non-NAS facilities is not identified. In the case of ports, this report includes only full-time

employment at Canadian Port Authorities, thereby excluding all personnel employed by non-port authorities and private firms. Various other jobs related to marine infrastructure, such as dredging, construction and maintenance of piers, berths and terminals, are not specifically addressed in this section. Finally, the employment figures reported for construction and maintenance of highways may be high, as it is impossible to break out the number of workers employed in heavy construction.

## GOVERNMENT SERVICES TIED TO TRANSPORTATION

### FEDERAL GOVERNMENT SERVICES

In 1999/2000, five federal departments and agencies have planned to devote 8,297 full-time employees to transportation.<sup>21</sup> This was a 1.6 per cent decrease from planned levels in 1998/99. These numbers do not include positions primarily concerned with transportation in other departments and agencies, such as Revenue Canada/Customs and Immigration, the federal police, Agriculture Canada, Heritage Canada and the National Capital Commission, for example. While some departments and agencies have some transport-related functions, the employment figures are not captured at a level of detail that allow identification of the associated jobs.

Table 7-14 shows planned full-time equivalents<sup>22</sup> in federal departments and agencies that deal directly with transportation.

**TABLE 7-14: PLANNED FULL-TIME EQUIVALENTS  
FEDERAL DEPARTMENTS AND AGENCIES**

	1990/91	1995/96	1996/97	1997/98	1998/99	1999/00
Transport Canada	19,857	18,388	12,257	4,840	4,480	4,204
Canadian Coast Guard <sup>1</sup>				3,731	3,468	3,602
Transportation Safety Board	300	300	255	223	229	234
Canadian Transportation Agency	491	447	356	260	249	249
Civil Aviation Tribunal	6	8	8	8	8	8
<b>Total</b>	<b>20,654</b>	<b>19,143</b>	<b>12,876</b>	<b>9,062</b>	<b>8,434</b>	<b>8,297</b>

<sup>1</sup> Included with Transport Canada until 1997/98.

Source: 1990-2000 Estimates, Federal Government Main Estimates

20 There are a number of non-CAA/LAA facilities for which employment data is not available.

21 Transport Canada, Canadian Coast Guard/DFO, Transportation Safety Board, Canadian Transportation Agency, Civil Aviation Tribunal.

22 The number of full-time positions, which does not necessarily directly equate to the number of people in the positions.

## PROVINCIAL AND TERRITORIAL GOVERNMENT SERVICES

Estimates indicate that employment related to transportation services in the provinces and territories has been slowly decreasing. Although it has not been possible to get an exact breakout for these services, estimates have been included in the summary tables for government services related to transportation. No attempt was made to estimate transport-related functions such as highway policing, safety or regulatory services provided by the provincial governments, or other activities such as truck inspection and highway patrol services.

## MUNICIPAL GOVERNMENT SERVICES

A large number of people are associated with transportation services at the municipal level. For example, personnel doing snow removal, street construction and maintenance, street cleaning, parking control and traffic-related policing all fall into this category. However, it was not possible to develop a comprehensive picture of these employees across Canada for this report.

## ASSOCIATED SERVICES

Estimates of employment in the transportation sector would be incomplete without including the number of people employed in the many other services directly associated with transportation. These include services related to "sales," such as travel agents, tour operators and third-party service providers (e.g. intermodal marketing companies, load brokers, logistics, freight forwarders, customs, brokers, etc.). There are also a number of services related to operations, such as air, rail and marine control, marine pilotage, food catering, marine bunkering and towing, and maintenance of equipment and insurance. Associated administrative support also accounts for a large number of jobs. Finally, there are numerous modal associations and unions (RAC, ATAC, CBA, CTA, etc.) that have administrative and other staff functions.

Due to data limitations, this section specifically addresses only the four-pilotage authorities, longshoremen working for the two maritime employers associations, and full-time employees at travel agencies, tour operators and tour wholesalers and operators.

## MARINE

### Pilotage Services

The number of personnel employed by Canada's four pilotage authorities has remained relatively stable since 1995. In 1999, the number of employees increased by 1.6 per cent, with the Laurentian Authority responsible for the entire increase.

Pilots made up over 75 per cent of all personnel in 1999; this is a slight increase from proportions observed in previous years (72 to 74 per cent). The Laurentian Authority accounted for 45 per cent of all pilots in Canada; the Pacific, Great Lakes and Atlantic authorities employed 28, 15 and 12 per cent, respectively. The number of administration staff has remained relatively stable since 1995.

Table 7-15 shows historical employment trends, by category, for each Pilotage Authority in Canada.

### Maritime Employers Associations

The number of personnel associated with both the British Columbia Maritime Employers Association (West Coast) and the Maritime Employers Association (MEA) in Eastern Canada has decreased since 1995. In the case of the MEA, a significant proportion of the decline was due to a 1996 change in the composition of ports that remained members of the organization.

Table 7-15 shows historical employment trends, by category, for the two maritime employers associations in Canada.

**TABLE 7-15: MARINE EMPLOYMENT, ASSOCIATED SERVICES, 1995 – 1999**

<i>Pilotage Authorities</i>	1995	1996	1997	1998	1999
Great Lakes Pilotage	76.5	75.5	82	83	83
Atlantic Pilotage	70	73	72	72	72
Laurentian Pilotage	219	214	216	224	233
Pacific Pilotage	171	167	167	167	167
Canada					
Administration	46.5	44.5	44	42	44
Pilots	392	396	403	413	416
Other <sup>1</sup>	98	89	90	91	95
<b>Total</b>	<b>536.5</b>	<b>529.5</b>	<b>537</b>	<b>546</b>	<b>555</b>
Maritime Employers Association <sup>2</sup>	2,058	1,204	1,285	1,279	1,253
BC Maritime Employers Association <sup>3</sup>	3,953	3,857	3,919	3,604	3,576

<sup>1</sup> "Other" includes dispatch, pilot boat and other unspecified services.

<sup>2</sup> Includes ports of Montreal, Trois-Rivières, Bécancour, Toronto and Hamilton (Quebec City, Halifax, Saint John in 1995).

<sup>3</sup> Includes ports of Vancouver, New Westminster, Prince Rupert, Chemainus, Port Alberni, Victoria, Port Simpson, Stewart and a category "Others".

Source: Canadian Pilotage Authorities, MEA, BCMEA

## AIR

### Travel Agencies, Tour Operators and Tour Wholesalers and Operators

Travel agencies, tour operators and tour wholesalers and operators employed 31,174 people in 1999. This was a 2.7 per cent increase over 1998 levels and a 15 per cent increase since 1990. Over 39 per cent of these workers were employed in Ontario. Personnel in Quebec, British Columbia and Alberta accounted for 26, 16 and 10 per cent of the total, respectively.

### Other Air-Related Associated Services

There are a number of personnel employed by associations related to the air industry. These groups include the Air Transport Association of Canada, the Northern Air Transport Association, the Ultra Light Pilots Association of Canada, Canadian Owners and Pilots Association and the Canadian Seaplane Association of Canada. In addition, carrier and air navigation staffs are represented by a number of unions, with administrative staff. It was not possible to retrieve accurate employment counts for these services for this issue of the report.

## AVERAGE SALARIES

### OVERVIEW

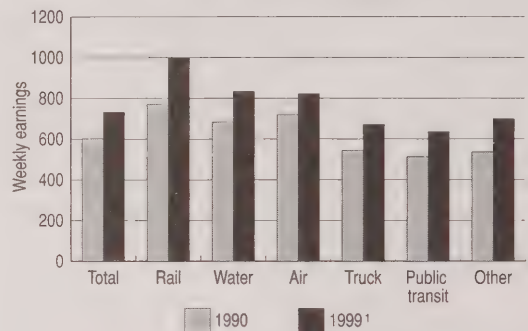
In 1999, average weekly earnings across all modes, including overtime, was \$734<sup>23</sup>. This was a small increase (0.7 per cent) over 1998, but equal to the 0.7 per cent increase in the economy as a whole.<sup>24</sup>

Railway employees continue to enjoy the highest average weekly earnings, at \$1,005 per week. In contrast, public transit and trucking employees averaged \$644 and \$669, respectively. If compared with 1998, very little change in average weekly salaries occurred during 1999 in any of the modes.

Employees in the rail industry enjoyed the largest increase (30 per cent) in average weekly earnings between 1990 and 1999. Wages in the air sector had the smallest increase over the same period, at 14 per cent. Average transportation wages in all sectors have increased by 21 per cent since 1990, the same as the economy as a whole.<sup>25</sup>

Figure 7-1 shows average weekly earnings, by mode, for 1990 and 1999.

FIGURE 7-1: AVERAGE WEEKLY EARNINGS, BY MODE



1 Average based on 12 months weighted annual averages.

Source: Statistics Canada, Cat. 72-002

Average weekly earnings for transport-related jobs in 1999 were highest in British Columbia, at \$837, followed by Alberta and Manitoba. Workers in New Brunswick and Saskatchewan, at \$636 and \$641, respectively, had the lowest average weekly incomes. If compared with 1990, workers in Alberta enjoyed the largest percentage increase in average weekly earnings over the last decade (32 per cent), followed by Ontario and Nova Scotia. Average weekly earnings in Quebec increased by 15.4 per cent between 1990 and 1999.

Table 7-16<sup>26</sup> shows the regional distribution of average weekly earnings in the transportation sector for the period 1990 to 1999.

23 Two sources have been used for earnings information. Statistics Canada's Survey of Employment, Payrolls and Hours (SEPH) was used for the broad average weekly comparisons between modes. Information from Statistics Canada's Transportation Division mode-specific surveys were used for more detailed breakdowns, by job category, as information at this level of detail is not available from SEPH.

24 Earnings primarily related to the provision of transport services.

25 All comparisons are based on current dollar values.

26 Statistics Canada's Survey on Employment, Payroll and Hours (SEPH) includes earnings for any person drawing pay for services rendered and for paid absences, and for whom the employer must complete a Revenue Canada T-4 Supplementary Form. For example, owner-operators in the trucking industry would not be included.



TABLE 7-16: AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR

	(Current dollars)					
By Mode <sup>1</sup> :	1990	1995	1996	1997	1998	1999 <sup>4</sup>
Total Economy	506	574	586	598	606	610
Total Transport	602	685	695	716	729	734
Rail	770	942	977	999	992	1,005
Water	685	796	813	830	827	837
Air <sup>2</sup>	720	789	803	816	812	825
Truck	544	600	613	638	675	669
Public Transit	510	586	575	625	631	644
Other <sup>3</sup>	535	631	659	690	694	700
By Region <sup>5</sup> :	1990	1995	1996	1997	1998	1999 <sup>7</sup>
Nova Scotia	540	N/A <sup>6</sup>	N/A <sup>6</sup>	618	646	683
New Brunswick	547	646	652	647	610	636
Quebec	603	657	657	680	689	696
Ontario	579	691	702	727	740	732
Manitoba	654	676	686	710	700	740
Saskatchewan	N/A <sup>6</sup>	597	615	639	635	641
Alberta	579	665	685	707	728	764
British Columbia	695	777	807	816	849	837

1 Does not include owner-operators, private trucking, delivery services or government employees.

2 Does not include incidental services (jobs that are associated with a particular industry but not defined in Statistics Canada Cat. 72-002).

3 Includes taxis, interurban and other modes.

4 Average based on 12 months weighted annual averages.

5 Comparable information not available for territories, Newfoundland and Prince Edward Island.

6 Data only available for Transportation and Storage.

7 Estimate based on 12 months weighted annual averages.

Source: Statistics Canada, Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

## RAIL

Average annual compensation in the rail sector has increased by 38 per cent from 1990 to 1999.<sup>27</sup> Historically, employees directly involved in providing rail transport services have had a significantly higher average compensation than the rail industry average. This differential has been increasing over time; in 1990 it was nine per cent, compared with 12 per cent in 1998.

With the exception of equipment maintenance workers (since 1995),<sup>28</sup> Class I railway employees earn significantly higher salaries than their Class II counterparts. This is particularly evident in the case of the transport services workers. In 1998, Class I workers averaged \$16,000 more per year than their Class II peers.

In current dollars, average annual compensation in the rail industry increased by four per cent in 1998 and an additional two per cent in 1999.

Table 7-17, shows average annual compensation in the rail industry in the various job categories for the period 1990 to 1999.

TABLE 7-17: AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY (Current dollars)

	Total Rail <sup>1</sup>	Class I	Class II
1990			
General	44,855	45,745	36,955
Transport services	44,978	45,916	37,948
Equipment maintenance	37,874	38,181	35,131
Road maintenance	37,024	38,433	28,623
Total	41,251		
1995			
General	54,762	55,983	42,800
Transport services	56,573	57,068	52,291
Equipment maintenance	45,795	45,750	46,190
Road maintenance	46,368	47,760	37,422
Total	51,602		
1998			
General	62,565	64,476	42,958
Transport services	62,621	64,587	48,621
Equipment maintenance	46,093	45,724	49,048
Road maintenance	49,741	51,111	41,549
Total	55,972		
1999 <sup>2</sup>			
Total	56,959		

1 Total Rail employment limited to carrier personnel.

2 Railway Trends, Railway Association of Canada.

Source: Statistics Canada, Cat. 53-216

## TRUCK

Average weekly earnings, by region, in the trucking industry vary considerably across the country. In 1999, the lowest average weekly earnings were in the Atlantic Region and Saskatchewan, with Prince Edward Island and Newfoundland close to 30 per cent below the national average of \$669 per week. The highest average weekly earnings were in British Columbia, 20 per cent above the national average. At \$688, average weekly earnings in Ontario were almost representative of the national average.

During 1999, average weekly earnings actually decreased in six provinces, leading to an overall decrease in the national average. The largest decline was in New Brunswick (6.9 per cent), followed by Saskatchewan (six per cent) and Ontario (four per cent). Alberta and Nova Scotia both enjoyed substantive increases of 5.7 and 4.3 per cent, respectively.<sup>29</sup>

Table 7-18 shows the regional distribution of average weekly earnings in trucking in Canada.

27 Average annual compensation is the gross amount paid to employees, including vacations, holidays, leave of absence with pay, and before deductions for income tax.

28 The industry went through a significant labour reduction program between 1993 and 1995, including the sale of CN subsidiary AMF Technotransport, which had previously been included in CN's Canadian Rail Operations.

29 Considering the industry opinion that there is a significant shortage of drivers in the trucking sector, the rather significant drop in average weekly earnings appears unrealistic. Possible causes may be: influx of younger, less-experienced drivers with lower average earnings; seasonal impacts; variation in the commodities hauled/distances covered; or changes in the interpretation or application of the survey results.



**TABLE 7-18: AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1990 – 1999**

	(Current dollars)					
	1990	1995	1996	1997	1998	1999 <sup>1</sup>
<b>Eastern Canada</b>						
Ontario	572	642	666	678	717	688
Quebec	517	558	553	573	616	613
New Brunswick	403	549	552	577	521	485
Nova Scotia	423	510	505	539	559	583
Newfoundland	434	445	436	516	473	478
Prince Edward Island	393	N/A	465	535	471	464
<b>Western Canada</b>						
British Columbia	628	671	681	725	808	803
Alberta	524	597	628	660	686	725
Saskatchewan	484	529	541	570	588	553
Manitoba	560	562	576	589	619	632
<b>Canada</b>	<b>544</b>	<b>600</b>	<b>613</b>	<b>638</b>	<b>675</b>	<b>669</b>

1. Based on a 12 months weighted average.

Source: Statistics Canada, Survey of Employment, Payroll and Hours, Cat. 72-002-XPB

## BUS

The average annual salary of employees of large<sup>30</sup> scheduled intercity bus operators was \$32,716 in 1998. This was a 6.7 per cent decrease from the average salary reported in 1990 (current dollars). The most significant decrease occurred during 1996, when average salaries dropped by 4.6 per cent from 1995 levels. Average salaries decreased by 3.4 per cent in 1997 and a further 1.5 per cent in 1998.

Large<sup>31</sup> school bus operators reported an average annual salary of \$14,784 in 1998, a 21 per cent decrease from 1990. Average salaries increased by 8.6 per cent in 1998, following a 12 per cent decline in 1997. Quebec had the highest average salary for this industry, at \$15,582, or 5.4 per cent higher than the national industry average. The average salary in western Canada was \$12,368, more than 16 per cent below the Canadian average.

Large<sup>32</sup> charter and other passenger bus companies reported an average annual salary of \$20,779 in 1998. The average salary in Ontario, \$18,751, was ten per cent lower than the industry average, while in Quebec and western Canada the average salary was ten and six per cent higher, respectively.

Urban transit companies reported an average annual salary of \$53,826 in 1998. Urban transit workers in British Columbia and the Territories enjoyed the highest average annual salaries, \$60,054, followed closely by workers in Quebec. Salaries in Atlantic Canada were considerably lower than the national average.

Historical comparisons are made difficult by the apparent erratic fluctuations in the average annual salaries reported for the intercity, school and charter bus sectors. These fluctuations can be explained by a number of factors alluded to earlier in the chapter.

Table 7-19 shows the average annual salary in the various sectors of the bus industry.

**TABLE 7-19: AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY**

	(Current dollars)				
	1990	1995	1996	1997	1998
Intercity	35,050	36,034	34,359	33,204	32,716
School Bus	18,692	14,463	15,474	13,616	14,784
Charter & Other	19,609	23,185	19,652	23,441	20,779
Urban Transit	42,186	50,882	52,275	52,827	53,826 <sup>1</sup>

1 Includes part-time workers.

Source: Statistics Canada Cat. 53-215

## MARINE

Annual labour costs per employee have increased by ten per cent since 1990. For-hire carrier compensation increased by 14 per cent, while that of government carriers increased by seven per cent over the same period. All the increases came at the expense of non-vessel crew members.

Table 7-20 shows the annual labour costs per employee for Canadian-based marine carriers.

**TABLE 7-20: ANNUAL LABOUR COSTS PER EMPLOYEE CANADIAN BASED MARINE CARRIERS<sup>1</sup>, 1990 – 1998**

	(Current dollars)				
	1990	1995	1996	1997	1998 <sup>2</sup>
Government	44,429	50,142	45,190	47,545	47,545
For-Hire	42,520	47,925	49,014	48,529	48,529
Total	43,832	49,580	47,130	48,098	48,098

1 Private carrier information included with government carriers.

2 Estimates based on 1997 data.

Source: Statistics Canada Cat. 54-205

## AIR

Average salaries and wages paid to Level I-III air carrier employees increased by 17 per cent between 1990 and 1998. Although labour costs had been steadily increasing until 1997, a slight decrease (0.3 per cent) was noted in 1998. Pilots and copilots and other flight personnel had their average salaries and wages decrease by 2.4 and 1.2 per cent, respectively. Conversely, management and

30 1990: carriers with annual revenues greater than \$500,000. 1995 – 1998: carriers with annual revenues greater than \$2,000,000.

31 1990: carriers with annual revenues greater than \$500,000. 1995 – 1998: carriers with annual revenues greater than \$2,000,000.

32 1990: carriers with annual revenues greater than \$500,000. 1995 – 1998: carriers with annual revenues greater than \$2,000,000.

administration employees enjoyed a 4.1 per cent increase. Average annual salaries and wages of other carrier personnel remained stable.

Average annual salaries and wages paid to Level IV air carrier employees increased by 37 per cent between 1990 and 1998. Preliminary data for 1998 indicates a very slight decrease (0.1 per cent) for this sector compared with 1997.<sup>33</sup> Average salaries and wages paid to Level IV air carrier employees in 1998 were ten per cent lower than those paid to their Level I-III counterparts.

Table 7-21 shows the labour cost of Levels I-V Canadian air carriers.

**TABLE 7-21: ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS**

	(Current dollars)				
	1990	1995	1996	1997	1998 <sup>1</sup>
<b>Levels I - III</b>					
Pilots and Copilots	75,833	77,482	82,341	84,173	82,123
Other Flight Personnel	30,341	35,951	38,061	37,512	37,076
Management and Administration	41,151	48,734	51,072	49,937	51,989
Other Carrier Personnel	37,194	40,132	42,448	42,956	42,982
Total Levels I-III <sup>2</sup>	40,832	45,153	47,789	48,019	47,855
<b>Level IV</b>					
Total Level IV <sup>3</sup>	31,430	42,794	43,700	43,003	42,941
<b>Levels I-IV</b>					
Total Levels I-IV	40,105	44,962	47,429	47,606	47,397

1 Preliminary data.

2 Level I-III: Canadian air carriers that in each of the two calendar years immediately preceding the report year, transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

3 Level IV: Canadian air carriers not classified in Levels I-III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of less than \$500,000 for air services for which the air carrier held a licence.

Source: Statistics Canada, Cat. 53-206-XPB

## LABOUR ACTION IN TRANSPORTATION<sup>34</sup>

### NUMBER OF WORK STOPPAGES

There were 17 labour stoppages recorded in 1999. Eight of these represented labour action in the bus and urban transit sector. There were three stoppages recorded in the rail sector during the fourth quarter of 1999. Air and water transport with one stoppage each, and truck and taxi, with two stoppages each, accounted for the remaining 33 per cent of labour action in the industry.

Overall, Canada has enjoyed a relatively stable labour environment in the transportation industry over the last decade. Between 1990 and 1998, labour stoppages fluctuated between a high of 28 in 1990 and a low of ten in 1996, averaging 18 stoppages per year over the period. The bus and urban transit sector contributed significantly to the higher numbers recorded in 1990 and 1991, and to the overall average.

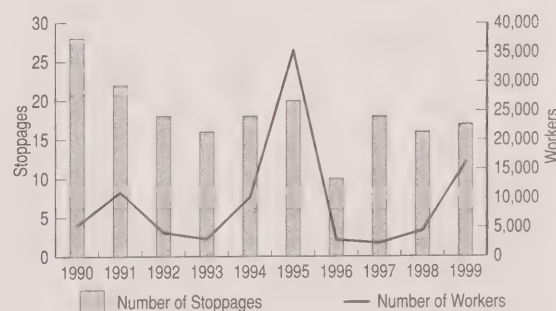
### NUMBER OF WORKERS INVOLVED

The number of workers involved in labour stoppages fluctuated between 2,300 and 35,000 between 1990 and 1998, averaging 8,700 per year over the period. While 1990 had the largest number of stoppages, the number of workers involved (5,311) was significantly below the annual average. The number of workers involved in work stoppages peaked in 1995 at 35,252; labour action in the rail sector accounted for 89 per cent of this total.

There were over 16,000 workers involved in stoppages in 1999. The bus and urban transit sector accounted for 58 per cent of this number; water and rail transport accounted, respectively, for 22 per cent and 13 per cent; and air, truck and taxi made up the remaining seven per cent.

Figure 7-2 shows the number of stoppages and workers involved in labour stoppages in the transportation industry over the last decade.

**FIGURE 7-2: NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1990 - 1999**



Source: Human Resources Development Canada

33 1999 data was not available at time of writing.

34 Labour action primarily refers to employees associated with the direct provision of transport services.

## PERSON-DAYS LOST

The number of person-days lost due to labour stoppages averaged 112,000 between 1990 and 1998, with a peak of 250,000 in 1995. Rail, with three stoppages that year, accounted for 85 per cent of all person-days lost. The lowest number of losses occurred in 1996 (49,860), with the bus and urban transit sector accounting for 86 per cent of that total.

Over 58,000 person-days were lost due to labour action in 1999. The one labour stoppage in the water transport sector at the Port of Vancouver during the fourth quarter of 1999 was the most significant one in transportation, accounting for over 33 per cent of total person-days lost in transportation in 1999. However the eight stoppages in the bus and urban transit sector accounted for an additional 37 per cent of that number. Work stoppages in the air and rail sector, respectively, accounted for 15 and 12 per cent of person-days lost. Losses in the truck and taxi sectors were negligible in 1999, accounting for only three per cent of transport's person-days lost.

Ontario was, after British Columbia, the most affected province by labour action with 20,030 person-days lost during 1999.<sup>35</sup> Nova Scotia lost 8,500 person-days in 1998 due to urban transit labour action, and British Columbia lost 2,660 person-days in 1999 to similar problems. Newfoundland accounted for 8,520 person-days lost in 1999 due to a labour stoppage in the air transportation sector.

Figure 7-3 compares the number of work stoppages and the associated number of person-days lost in the transportation industry over the last decade.

FIGURE 7-3: LABOUR ACTION, 1990 – 1999



Source: Human Resources Development Canada

Table 7-22 summarizes the number of stoppages, workers involved and person-days lost due to labour action in the transportation industry since 1990.

TABLE 7-22: LABOUR ACTION BY MODE OF TRANSPORT

	1990	1995	1996	1997	1998	1999
<b>Number of Stoppages</b>						
Air	1	1	1	7	3	1
Rail	3	3	1	0	1	3
Water	6	4	0	4	4	1
Truck	5	3	2	5	4	2
Bus/Urban	11	3	4	1	4	8
Taxi	2	6	2	1	0	2
Total	28	20	10	18	16	17
<b>Workers Involved</b>						
Air	24	65	147	1,177	2,693	265
Rail	1,880	31,540	502	0	25	2,130
Water	408	2,306	0	472	459	3,550
Truck	570	209	100	559	250	860
Bus/Urban	2,385	838	2,031	68	1,006	9,296
Taxi	44	294	49	7	0	24
Total	5,311	35,252	2,829	2,283	4,433	16,125
<b>Person-Days Lost</b>						
Air	1,100	3,420	600	51,420	33,840	8,520
Rail	29,540	211,730	2,150	0	180	7,080
Water	20,160	15,010	0	1,499	10,510	19,620
Truck	14,100	1,000	850	14,220	15,450	1,700
Bus/Urban	31,070	6,000	42,820	2,340	28,150	21,490
Taxi	630	13,260	3,440	850	0	110
Total	96,600	250,420	49,860	70,329	88,130	58,520

Source: Human Resources Development Canada

35 1999: Four urban transit strikes.

# TRANSPORTATION AND TRADE

# 8

*Both domestic and international trade continue to have a huge impact on Canadian transportation. Continuing globalization of the world economy will only enhance transportation's vital role in all trade activity.*

Transportation is critical to any trade transaction. Canada's open economy needs transportation for shipping commodities to, and receiving them from, other countries, as well as for moving goods within or between provinces. The close link between trade and transportation therefore means that the growth and structure of trade influence not only the growth in transport demand, but also the choice of modes.

This chapter examines Canada's domestic and international trade and its relationship with transportation, primarily for the period of 1992–1998. Domestic trade is looked at in terms of goods and services<sup>1</sup> moved within and between provinces.<sup>2</sup> International trade with the US and other countries is examined both in terms of composition of goods and services carried, and in modal choice. This chapter will explore how trade has a direct influence on the type of transportation used.

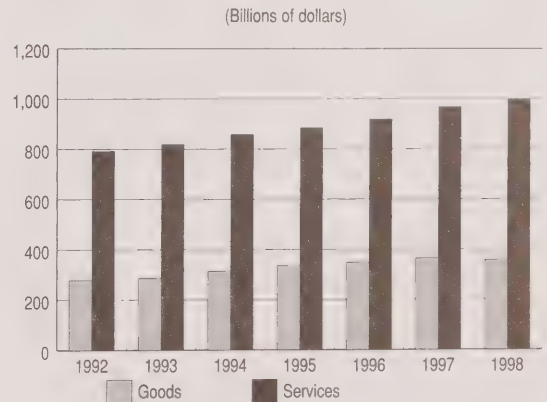
## DOMESTIC TRADE

From 1992 to 1998, the value of domestic trade (goods and services) rose from \$1,071 billion to \$1,354 billion (in current dollars). This implies that, after the recession of the early 1990s, the value of domestic trade increased at an average annual rate of four per cent over this period. In constant (1992) dollars, however, this annual average growth is reduced to 2.7 per cent. As explained later in this chapter, this growth in domestic trade is modest when compared with that of external trade over the same period.

Intraprovincial trade flows dominated domestic trade, in a ratio that remained relatively constant over the 1992–1998 period, with intraprovincial trade at 87 per cent of total domestic trade and interprovincial at 13 per cent. In terms of goods and services, the share of domestic trade for services was constant at 74 per cent, while that for goods levelled at 26 per cent.

Figures 8-1 and 8-2 show Canada's domestic trade by type and sector from 1992 to 1998.

FIGURE 8-1: DOMESTIC TRADE BY TYPE, 1992 – 1998



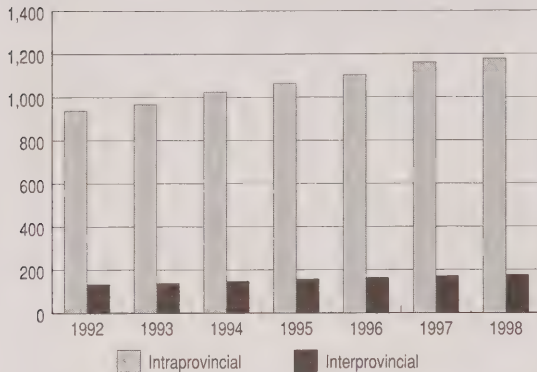
Source: Statistics Canada, Input-Output Division.

- 1 "Goods" consist of primary and manufactured products. "Services" refer to activities such as transportation and storage, communication services, wholesale and retail trade services, finance, insurance and real estate services, business and personal, and miscellaneous services.
- 2 Interprovincial trade flows are estimated using the provincial National Accounts Information System, which is based on inputs and outputs. Statistics Canada recently issued a new time series up to 1998, but this does not include a modal breakdown of the provincial trade flows.



FIGURE 8-2: DOMESTIC TRADE BY SECTOR, 1992 – 1998

(Billions of dollars)



Source: Statistics Canada, Input-Output Division

## COMPOSITION OF TRADE

Goods and services generate different needs in transportation. From 1992 to 1998, the value of services traded rose from \$792 billion to \$996 billion, a 3.9 per cent average growth. Over 90 per cent of services were traded intraprovincially. In 1998, major domestic services were related to business and finance (\$206 billion), the government sector (\$190 billion), wholesale and retail trade (\$125 billion), construction (\$106 billion) and transportation (\$66 billion).

The value of goods traded domestically rose from \$278 billion to \$358 billion, representing an average annual growth of 4.3 per cent. Fabricated materials and manufactured goods represented nearly 80 per cent of total domestic trade, while primary goods and crude materials accounted for the rest. Over 70 per cent of total domestic trade in goods was intraprovincial.

TABLE 8-1: DOMESTIC TRADE BY SECTOR, 1998

(Billions of dollars)

Sectors	Goods	Services	Total	Goods' Share (per cent)	Services' Share (per cent)
Intraprovincial	255.4	922.0	1,177.4	22	78
Interprovincial	102.2	74.4	176.6	58	42
Total	357.6	996.4	1,354.0	26	74

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

Table 8-1 presents the value of domestic trade by sector and type of commodity for 1998.

## TRANSPORTATION BY MODE

From 1992 to 1998, the volume carried by various modes increased by an average of three per cent, from 362 million to 429 million tonnes. Rail accounted for the greatest share, oscillating between 46 and 50 per cent of total tonnage moved. For-hire trucking<sup>3</sup> followed closely, increasing its share from 34 per cent to 41 per cent. Marine's share declined slightly, from 14 to 11 per cent. Air carried less than one per cent.

Table 8-2 shows that in 1998, 429 million tonnes were moved within domestic borders. Rail and marine realized over 70 per cent of their activity in the shipping of primary goods and crude materials, while for-hire trucking realized about the same but in manufactured goods and fabricated materials. Container shipping accounted for less than one per cent of domestic marine tonnage and seven per cent of that for domestic rail.

TABLE 8-2: DOMESTIC TRANSPORTATION FLOWS,<sup>1</sup> 1998

(Millions of tonnes)

	Rail	Marine	For-hire Truck	Air	Total
Primary Products					
Grains	26.0	5.2	4.7		35.9
Forest Products	19.6	8.7	27.5		55.8
Metallic Ores	49.2	7.1	1.3		57.6
Non-metallic Minerals	21.5	10.7	13.8		46.0
Minerals Fuels	38.8	1.7	5.2		45.7
Total:	155.1	33.4	52.5		241.0
Manufactured Products	47.3	14.9	125.3	0.5	188.0
Total all Products	202.4	48.3	177.8	0.5	429.0

<sup>1</sup> Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

Source: Transport Canada, adapted from various Statistics Canada publications

The trucking share would be higher if traffic activities of small for-hire carriers, private trucking carriers and owner-operators could be taken into account.<sup>4</sup>

<sup>3</sup> For-hire trucking includes Class I and II carriers earning annual intercity revenues of \$1 million and more, as defined by Statistics Canada in the "Quarterly For-Hire Trucking (Commodity Origin/Destination) Survey." Courier and messenger service, private carrier and owner-operator activities are excluded from the Survey.

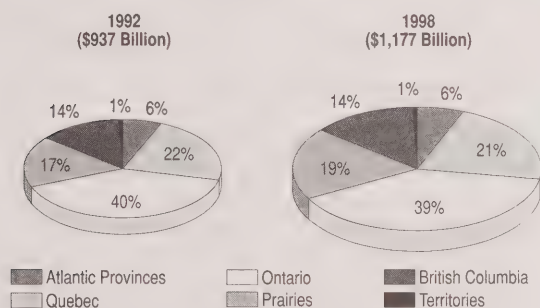
<sup>4</sup> Starting with 1997, methodological changes were introduced by Statistics Canada in its trucking surveys to be in accordance with the new North American Industrial Classification System (NAICS). As result, the for-hire carriers with annual revenues of \$1 million and more that had more than 50 per cent of their business revenues driven by local movements (less than 80 km) are no longer surveyed.

## INTRAPROVINCIAL TRADE

From 1992 to 1998, intraprovincial trade grew from \$937 billion to \$1,177 billion at an annual average increase of 3.9 per cent. As mentioned previously, trade in services dominated each province's intraprovincial trade, averaging 78 per cent of the total.

Figure 8-3 shows that shares did not change significantly over the period. Ontario remained the key intraprovincial trading province, with close to 40 per cent of Canada's total intraprovincial trade. Quebec was second with a 22 per cent share, followed in order by the Prairie provinces at 19 per cent (led by Alberta), British Columbia at 14 per cent, the Atlantic provinces at six per cent and the territories at one per cent.

FIGURE 8-3: INTRAPROVINCIAL TRADE BY PROVINCE, 1992 and 1998



Source: Statistics Canada, Input-Output Division

Although less than services, the value of goods traded within each province rose from \$199 billion to \$255 billion.

Table 8-3 shows that, in terms of tonnage, for-hire trucking and rail filled the freight transport demand generated by intraprovincial trade in 1998. Trucking's share is probably larger than indicated here, as data on private carriers, owner-operators and small for-hire carriers were not available.

## INTERPROVINCIAL TRADE

Although interprovincial trade is a small component of domestic trade, it is important because it shows economic interactions between provinces and indicates changes.

TABLE 8-3: DOMESTIC TRANSPORTATION FLOWS,<sup>1</sup> BY SECTOR AND MODE, 1998

Sectors	(Millions of tonnes)				Total
	Rail	Marine	For-hire Truck	Air	
Intraprovincial	86.0	29.3	130.7	N/A	246.0
Interprovincial	116.4	19.0	47.1	N/A	182.5
Total:	202.4	48.3	177.8	0.5	429.0

<sup>1</sup> Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

Source: Transport Canada, adapted from various Statistics Canada data

From 1992 to 1998, interprovincial trade grew from \$134 billion to \$177 billion at an average annual increase of 4.7 per cent. As opposed to intraprovincial trade, goods dominated with nearly 60 per cent of the total, with services having 40 per cent.

In 1998, major services traded between provinces were finance and business (\$22 billion), trade wholesale and retail (\$21 billion) and transportation (\$14 billion). In the same year, the value of goods moved between provinces was estimated at \$102 billion. Close to 13 per cent of these were primary or crude products (e.g. mineral fuels). Major traded commodities were food products (\$21 billion), machinery and equipment (\$17 billion) and mineral fuels (\$12 billion). As shown in Table 8-3, rail and for-hire trucking were the main modes used to move goods between provinces in 1998.

## MAIN EAST-WEST ROUTES

Table 8-4 shows the main interprovincial trade markets and underlines the strong trade linkages between neighbouring provinces.

In 1998, six two-way interprovincial trade flows, each with over \$10 billion of trade, represented over 70 per cent of total interprovincial trade. Five of these two-way trade flows had Ontario as the originating province. The most important interprovincial trade flows involved Quebec and Ontario and totalled \$51 billion, including \$29 billion from Ontario to Quebec. This two-way route represented 29 per cent of total interprovincial trade.

Other main interprovincial two-way routes were Ontario-Alberta, valued at \$22 billion, or 12 per cent of total interprovincial trade, followed by Ontario-British Columbia (\$15 billion, or eight per cent), and Ontario-Manitoba/Saskatchewan (\$14 billion, or eight per cent). These share proportions were stable over the 1992-1998 period.

TABLE 8-4: INTERPROVINCIAL TRADE<sup>1</sup>, MAIN EAST–WEST ROUTES, 1998

(Billions of dollars)			
Routes (from/to)	Trade Value	Total two-way	Share in per cent
Ontario/Quebec	29.1	51.1	29
Quebec/Ontario	22.0		
Ontario/Alberta	12.9	21.7	12
Alberta/Ontario	8.8		
Ontario/British Columbia	11.0	14.8	8
British Columbia/Ontario	3.8		
Ontario/Manitoba & Saskatchewan	8.6	13.8	8
Manitoba and Saskatchewan/Ontario	5.2		
Ontario/Atlantic Provinces	10.1	13.2	7
Atlantic Provinces/Ontario	3.1		
Alberta/British Columbia	6.5	12.0	7
British Columbia/Alberta	5.5		
Quebec/Atlantic Provinces	5.5	9.1	5
Atlantic provinces/Quebec	3.6		
Alberta/Manitoba and Saskatchewan	5.2	8.9	5
Manitoba and Saskatchewan/Alberta	3.7		
Quebec/Alberta	3.9	6.6	4
Alberta/Quebec	2.7		
Quebec/British Columbia	3.8	5.7	3
British Columbia/Quebec	1.9		
Sub-Total:		156.9	89
Other Routes		19.7	11
Total Interprovincial Trade		176.6	100

1 No double counting as the exports of one province are the imports of another. Interprovincial trade includes value of goods and services.

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

Figures 8-4 and 8-5 show primary interprovincial trade flows in 1998.

FIGURE 8-4: INTERPROVINCIAL TRADE MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1998



Source: Transport Canada

FIGURE 8-5: INTERPROVINCIAL TRADE MAIN TRADE FLOWS, OTHER REGIONS' AS ORIGIN, 1998



1 Excluding Ontario as origin.

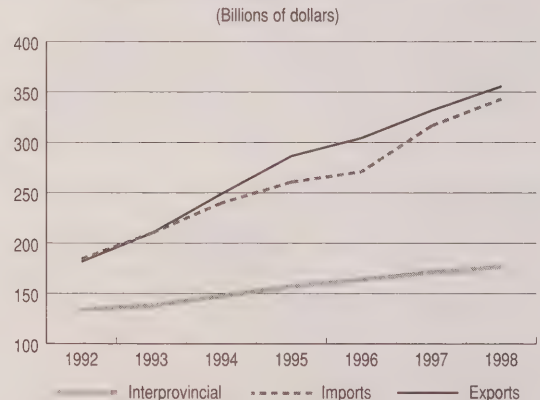
Source: Transport Canada

## INTERNATIONAL TRADE

Trade flows are one of many ways to illustrate interactions between Canada and other countries. Comparing east–west interprovincial trade flows with north–south international trade flows reveals the increasing importance of outside markets to the provincial economies.

From 1992 to 1998, international exports and imports grew at an average annual rate of 11.9 per cent and 10.9 per cent, respectively. Interprovincial trade, on the other hand, grew at a more modest rate of 4.7 per cent. International exports and imports almost doubled, with exports rising from \$181 billion to \$356 billion, and imports jumping from \$184 billion to \$343 billion.

FIGURE 8-6: TRENDS – INTERPROVINCIAL TRADE VS EXPORTS AND IMPORTS, 1992 – 1998



Source: Statistics Canada, Input-Output Division

Figure 8-6 shows trends in interprovincial trade versus exports and imports from 1992 to 1998.

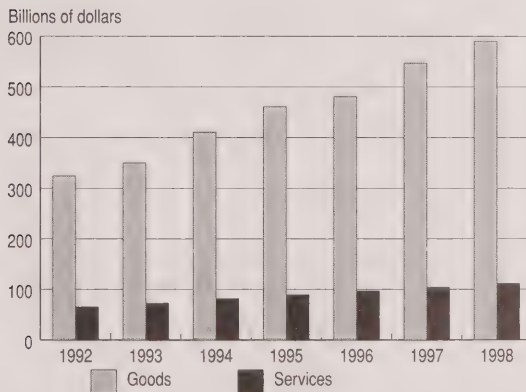
### COMPOSITION OF IMPORTS AND EXPORTS

From 1992 to 1998, goods dominated international exports and imports, with a share over services ranging from 82 to 84 per cent. In 1998, goods traded by Canada at the international level were estimated at \$590 billion, while services were valued at \$110 billion.

Main services traded by provinces at the international level were business and finance (\$41 billion), transportation (\$28 billion), trade wholesaling (\$13 billion), and personal/miscellaneous services (\$13 billion). Goods were concentrated into manufactured products and fabricated materials, totalling nearly 90 per cent of the total. The share of primary goods fell from 11 to eight per cent over this period.

Figure 8-7 shows Canada's external trade by type from 1992 to 1998.

FIGURE 8-7: INTERNATIONAL TRADE BY TYPE, 1992 – 1998



Source: Statistics Canada, Input-Output Division

### TRADE FLOWS AND MODAL CHOICE

To examine the relation between trade flows and the choice of modes, the trade flows of goods will be explored in two ways: Canada's trade with the US and Canada's trade with other countries.

## CANADA-US TRADE

### IMPACT OF CANADA-US TRADE

Canada's trade with the US has been a driving force in the overall performance of its economy and trade activities. From 1992 to 1998, the share of exports to the US rose from 77 to 85 per cent of Canada's total exports. At the same time, the share of imports from the US increased from 65 to 68 per cent of Canada's total imports from all countries.

From 1992 to 1998, exports to the US soared from \$126 billion to \$270 billion, an annual growth rate of 13.6 per cent. At 4.6 per cent, the average growth of exports to countries other than the US was more modest, a situation partially explained by the Asian and Latin American currency crises and a recession that took a heavy toll on the economies in these regions during 1998.

Imports from the US grew by an average annual rate of 13.3 per cent, jumping from \$96 billion to \$204 billion. As for imports from countries other than the US, the average growth rate reached 10.7 per cent.

### MODAL SPLIT

Trucking and rail were the main modes of transportation for transborder trade.<sup>5</sup> In 1998, the trucking mode dominated Canada's trade with the US, at 63 per cent of exports and 80 per cent of imports. This was followed by rail, at 21 per cent of exports and nine per cent of imports. The pipeline mode (included in "Other" mode) ranked third in carrying exports to the US, while air took second place in imports.

From 1992 to 1998, the trucking and air modes registered a slight increase in their shares (mainly in exports), while rail and marine experienced a decline, both growing at a slower pace than trucking and air.

Table 8-5 shows Canada's exports to and imports from the US by mode and sector.

5 More than one mode of transportation might be used to carry traded goods from origin to destination. For *exports*, the mode of transportation indicates the mode by which the international boundary is crossed. For *imports*, the mode of transportation represents the last mode by which the cargo was transported to the port of clearance in Canada. This may not be the mode by which the cargo arrived at the Canadian port of entry in the case of inland clearance. This may lead to some underestimation of Canadian imports by the marine and air modes.



TABLE 8-5: CANADA-US TRADE BY MODE AND SECTOR, 1992 - 1998

Year	Billions of dollars	Share in per cent					
	EXPORTS <sup>1</sup>	Road	Rail	Marine	Air	Other	
1992	125.7	57.9	23.6	2.9	4.8	10.8	
1993	150.7	57.6	24.4	2.9	4.5	10.6	
1994	183.3	57.9	24.6	2.7	4.9	9.9	
1995	207.8	57.5	25.1	3.3	4.7	9.4	
1996	223.2	59.0	22.6	3.1	4.5	10.8	
1997	245.1	59.5	22.4	2.7	5.0	10.4	
1998	269.9	62.7	20.8	2.3	5.2	9.0	
Year	IMPORTS	Road	Rail	Marine	Air	Other	
1992	96.5	80.8	8.7	1.8	8.3	0.4	
1993	113.8	81.9	8.5	1.6	7.5	0.5	
1994	137.3	81.1	9.4	1.4	7.7	0.4	
1995	150.7	80.1	9.5	1.5	8.6	0.3	
1996	156.9	79.9	8.8	1.5	9.2	0.5	
1997	184.3	79.2	9.6	1.5	9.2	0.6	
1998	203.6	80.0	8.6	1.5	9.2	0.7	

<sup>1</sup> Total exports including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

## CANADA-US TRADE BY REGION

In 1998, four provinces captured 93 per cent of Canada's trade with the US. Ontario dominated with 65 per cent of transborder trade, accounting for \$158 billion in exports and \$148 billion in imports. Quebec was next with 14 per cent, accounting for \$48 billion in exports and \$20 billion in imports. Alberta and British Columbia followed with seven per cent and six per cent, respectively. All Canadian provinces, except Manitoba and the Yukon Territory, registered a positive balance, as their exports to the US exceeded their imports.

TABLE 8-6: CANADA-US TRADE<sup>1</sup> BY PROVINCE, 1988 and 1998

	(Billions of dollars)		Share in per cent	
	1988	1998	1988	1998
Ontario	119.6	306.6	64.2	64.8
Quebec	28.1	67.9	15.1	14.3
Alberta	12.5	34.1	6.7	7.2
British Columbia	12.7	29.6	6.8	6.3
Manitoba	4.2	13.6	2.2	2.9
Saskatchewan	3.2	9.5	1.7	2.0
New Brunswick	2.8	6.4	1.5	1.4
Nova Scotia	1.8	3.4	1.0	0.7
Newfoundland	1.4	1.9	0.7	0.4
Prince Edward Island	0.1	0.4	0.1	0.1
Yukon	0.0	0.0	0.0	0.0
Northwest Territories	0.0	0.0	0.0	0.0
<b>TOTAL:</b>	<b>186.3</b>	<b>473.5</b>	<b>100.0</b>	<b>100.0</b>

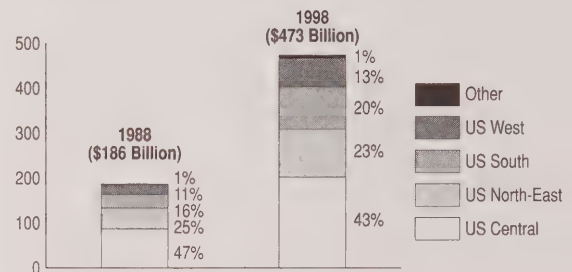
<sup>1</sup> Total exports and imports

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations.

Table 8-6 shows Canada's trade with the US by province in 1988 and 1998. Provinces' shares did not vary significantly between these two years.

In 1998, transborder trade by US region<sup>6</sup> revealed the predominance of the US Central region, which captured 43 per cent of the trade for a total of \$202 billion (\$113 billion from Canada, and \$89 billion to Canada). The US North East region ranked second with \$107 billion (23 per cent of the trade), followed by the US South at \$94 billion and the US West at \$64 billion. All US regions recorded a negative balance with Canada, except the South, which shipped more goods to Canada than it received.

Figure 8-8 shows transborder trade by US region for 1988 and 1998.

FIGURE 8-8: CANADA-US TRADE<sup>1</sup> BY US REGION, 1988 AND 1998

Note: Other e.g. Alaska, Hawaii.

<sup>1</sup> Total exports and imports.

Source: Statistics Canada, International Trade Division.

Between 1988 and 1998, two US regions increased their shares of trade with Canada: the South, from 16 per cent to 20 per cent, and the West, from 11 per cent to 13 per cent. As explained later, the increasing importance of US southern and western regions reflects surface modes taking goods over longer distance, farther away from Canadian points.

## PREFERRED MODE

As mentioned previously, trucking is the dominant mode in Canada-US trade. From 1991 to 1998, the number of trucks crossing Canada-US border points increased at an average annual rate of 7.9 per cent, from 19,680 units to 33,410 units on a daily basis.<sup>7</sup> Over the same period, the share of daily crossings for trucks of Canadian firms rose from 57 per cent to 66 per cent.

<sup>6</sup> US regions include US Central, i.e. the states bordering the Great Lakes (Central East) and those of North and South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West); US North East, which refers to the New England and Atlantic states such as New Jersey, New York and Pennsylvania; US South, which includes southern states from the Atlantic coast to the Gulf of Mexico; and US West, which includes US mountain and Pacific states.

<sup>7</sup> Adapted by Transport Canada from Statistics Canada, International Travel data.

Canada-based for-hire trucking carriers have been transporting goods over greater distances. From 1988 to 1998, the average distances by tonne carried rose by an average annual rate of 2.7 per cent for exports (from 791 to 1,037 kilometres) and by an average rate of 2.5 per cent for imports<sup>8</sup> (from 928 to 1,184 kilometres).

## MAJOR CANADA-US TRADE FLOWS

In 1998, there were 16 two-way trade flows between Canada and the US worth at least \$9 billion each, representing close to 85 per cent of total Canada-US trade. Trucking was the dominant mode of transportation, capturing a 50 per cent share or more in 14 of them.

Four trade flows, all involving Ontario, totalled \$241 billion, or more than 50 per cent of total transborder trade. The largest was between Ontario and the US states bordering the Great Lakes, which accounted for a 30 per cent share, with exports of \$75 billion and imports of \$66 billion. The vehicles and parts trade dominated Ontario's exports, mostly to Michigan, valued at \$44 billion (\$39 billion carried by truck, \$14 billion by rail). Likewise, Ontario's imports consisted mainly of the vehicle and parts trade at \$26 billion (\$22 billion by truck, \$4 billion by rail) and of machinery and equipment at \$19 billion with truck as the mode of choice.

Table 8-7 illustrates the 16 trade flows, showing the trade balance and modal breakdown for each.

Figures 8-9 and 8-10 illustrate the Canada-US trade flows involving Ontario and other Canadian regions.

FIGURE 8-9: CANADA-US TRADE, MAIN ONTARIO TRADE FLOWS, 1998



Source: Transport Canada

TABLE 8-7: CANADA-US TRANSBORDER TRADE SHOWING MAIN NORTH-SOUTH TRADE FLOWS, 1998

		(Billions of dollars)				Main modes used (Per cent of total value)
Canadian Region	US Region	Exports from Canada	Imports to Canada	Total trade	Share in per cent	
Ontario	US Central East	74.6	65.9	140.5	30	Road (82), Rail (16)
Ontario	US Middle Atlantic	29.2	20.5	49.7	10	Road (78), Rail (17)
Ontario	US South Atlantic	11.3	15.7	27.0	6	Road (81), Rail (10)
Ontario	US Pacific	14.3	9.3	23.6	5	Road (54), Air (25)
Quebec	US Middle Atlantic	12.5	4.3	16.8	4	Road (79), Rail (13)
Ontario	US Central West	6.8	9.0	15.8	3	Road (73), Rail (17)
Ontario	US South Central	5.9	9.6	15.5	3	Road (82), Rail (15)
Ontario	US South West	5.8	9.4	15.2	3	Road (71), Rail (19)
British Columbia	US Pacific	8.1	6.6	14.7	3	Road (70), Marine (8)
Quebec	US New England	8.4	5.1	13.5	3	Road (85), Air (6)
Prairies	US Central East	8.6	4.9	13.4	3	Road (42), Pipeline (35)
Quebec	US Central East	9.7	2.1	11.9	3	Road (57), Rail (30)
Prairies	US Central West	7.9	3.7	11.7	2	Road (53), Pipeline (31)
Ontario	US New England	6.0	5.2	11.2	2	Road (78), Air (14)
Quebec	US South Atlantic	6.4	2.8	9.2	2	Road (61), Air (21)
Prairies	US Pacific	6.9	2.2	9.1	2	Road (41), Pipeline (33)
<b>Sub-Total:</b>		<b>222.5</b>	<b>176.3</b>	<b>398.8</b>	<b>84</b>	
Other		47.4	27.3	74.7	16	
<b>Total Canada/US trade:</b>		<b>269.9</b>	<b>203.6</b>	<b>473.5</b>	<b>100</b>	

US Central includes the states bordering the Great Lakes (Central East) and those of North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West);

US NorthEast refers to New England states and Middle Atlantic states such as New Jersey, New York, and Pennsylvania;

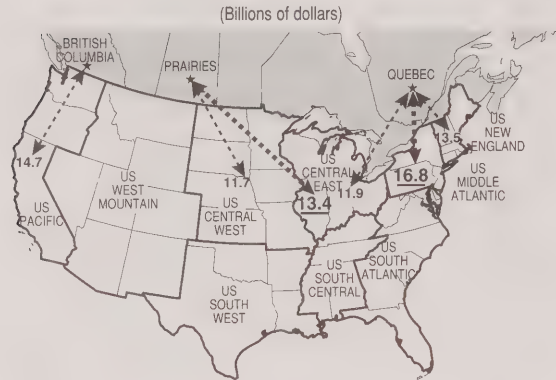
US South includes southern states from the Atlantic coast to the Gulf of Mexico; and

US West refers to US mountain states and Pacific states.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

8 Based on Statistics Canada, For-hire Trucking (Commodity Origin/Destination) Survey.

**FIGURE 8-10: CANADA-US TRADE, MAIN CANADIAN REGIONS' TRADE FLOWS, 1998**



1 Excluding Ontario.

Source: Transport Canada

## STRENGTH OF CANADA-US TRADE

Internal and external factors have contributed to the increase in Canada's trade with the US. Among these are dollar exchange rates and the gradual reduction of tariffs on goods as a result of trade agreements.

From 1988 to 1998, the share of duties collected on total goods imported from the US decreased steadily, from 2.6 per cent to 0.2 per cent. Table 8-8 shows the share of duties collected on selected imported goods from the US.

**TABLE 8-8: CANADA-US TRADE, SHARE OF DUTIES ON GOODS IMPORTED FROM THE US FOR SELECTED YEARS FROM 1988 TO 1998**

	(Per cent)			
	1988	1992	1995	1998
Total Goods	2.6	1.8	0.7	0.2
Selected goods:				
Vehicle and Parts	0.3	0.3	0.2	0.0
Machinery and Equipment	2.1	0.8	0.3	0.0
Electrical Machinery	3.2	1.7	0.7	0.1
Household	8.8	3.9	1.2	0.1
Paper and Other Products	5.9	1.9	0.2	0.0
Chemical Products	4.9	2.0	0.4	0.1
Plastic and Rubber Products	6.6	3.5	1.4	0.1
Iron and Steel Products	5.1	3.3	1.6	0.1
Non-metallic Products	4.2	2.4	0.9	0.1
Non-ferrous Products	3.2	1.7	0.6	0.0
Dairy Products	5.9	3.5	1.9	0.2

1 Ratio of duties collected to total value of imported goods.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

With exports, the currency exchange rate made Canadian goods relatively less expensive to American consumers. Table 8-9 shows the exchange rate evolution in recent years.

**TABLE 8-9: EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED UNIT**

	US Dollar	British Pound	German Mark	Japan Yen ('000s)
1989	1.184	1.941	0.631	8.60
1993	1.290	1.938	0.781	11.65
1995	1.372	2.166	0.959	14.68
1997	1.385	2.268	0.799	11.45
1999	1.486	2.404	0.811	13.11

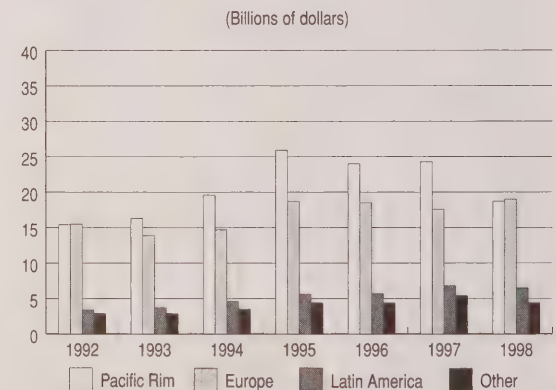
Source: Statistics Canada, Cat. 11-010

## CANADA'S TRADE WITH COUNTRIES OTHER THAN THE US

Canada's trade with countries other than the US is less significant than trade with the US. From 1992 to 1997, exports grew by an average rate of 7.9 per cent, from \$37 billion to \$54 billion. In 1998, however, they fell to \$49 billion, due to recessions and the financial crisis that hit the Asian and Latin American economies. Imports from countries other than the US were not affected by such financial crises and grew annually at an average rate of 10.7 per cent, from \$52 billion (1992) to \$95 billion (1998).

Figures 8-11 and 8-12 illustrate Canada's trade with countries other than the US.

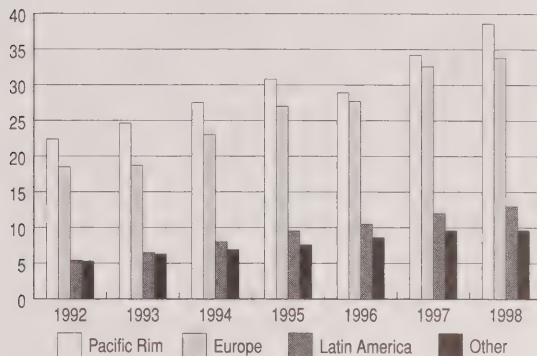
**FIGURE 8-11: EXPORTS TO NON-US COUNTRIES, 1992 - 1998**



Source: Statistics Canada, International Trade Division

FIGURE 8-12: IMPORTS FROM NON-US COUNTRIES, 1992 – 1998

(Billions of dollars)



Source: Statistics Canada, International Trade Division

## TRADE BY MODE

Marine and air were the primary modes used in trade with countries other than the US. From 1992 to 1998, marine's share declined in both exports and imports. Over the same period, air's share grew from 16 to 19 per cent in exports, and from 15 to 22 per cent in imports. This trend reflects the increasing trade in high-valued commodities such as electronic and telecommunications equipment. Air imports of electronic and electric machinery/equipment grew at an average annual rate of 28 per cent, jumping from \$1.2 billion to \$5.2 billion in value. The value of other equipment/machinery imported by air also increased by an average 23 per cent over the same period.

Table 8-10 shows modal shares of Canada's exports and imports with countries other than the US.

TABLE 8-10: CANADA–NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1992 – 1998

(Billions of dollars)

Year	EXPORTS <sup>1</sup>	Share in per cent				
		Road	Rail	Marine	Air	Other
1992	37.2	8.1	0.7	74.7	16.4	0.0
1993	36.9	9.2	1.1	72.6	17.1	0.0
1994	42.4	9.6	1.5	72.4	16.5	0.0
1995	54.5	9.4	1.2	74.0	15.4	0.0
1996	52.6	9.0	1.1	72.9	17.0	0.0
1997	54.2	9.2	1.7	72.8	16.4	0.0
1998	48.6	7.8	1.3	71.4	19.4	0.0

Year	IMPORTS	Share in per cent				
		Road	Rail	Marine	Air	Other
1992	51.5	32.0	4.9	44.9	14.6	3.7
1993	56.1	26.1	3.9	50.8	16.6	2.7
1994	65.4	25.4	3.7	50.2	18.7	2.0
1995	74.9	25.1	3.7	49.7	19.5	1.9
1996	75.6	26.2	3.5	47.4	20.3	2.7
1997	88.5	31.3	4.5	40.1	22.0	2.1
1998	95.0	35.9	3.6	37.5	21.8	

<sup>1</sup> Total exports including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations

## DIRECTION OF TRADE FLOWS

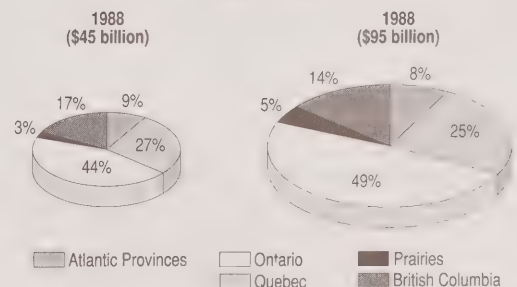
Between 1988 and 1998, eastern and western provinces generally shared exports to countries other than the US on an equal basis. In 1998, however, eastern provinces accounted for a slightly larger proportion (54 per cent) than western provinces. This reflects decreased exports to the Pacific Rim countries, which were primarily shipped from the western provinces.

In terms of the import of goods, the eastern provinces accounted for over 80 per cent, dominated by Ontario, with 49 per cent. From 1988 to 1998, the eastern provinces were the main provinces of clearance for imports from countries other than the US, and Ontario increased its share from 44 per cent to 49 per cent. Canada had a negative trade balance with most countries other than the US. In 1998, exports to overseas countries totalled \$49 billion, while imports from the same countries reached \$95 billion.

Figures 8-13 and 8-14 show provincial shares in Canada's trade with countries other than the US in 1988 and 1998.

FIGURE 8-13: IMPORTS FROM NON-US COUNTRIES BY PROVINCE OF CLEARANCE, 1988 vs 1998

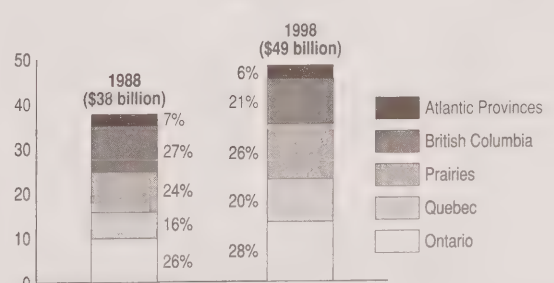
(Billions of dollars)



Source: Statistics Canada, International Trade Division

FIGURE 8-14: EXPORTS TO NON-US COUNTRIES BY PROVINCE OF ORIGIN, 1988 vs 1998

(Billions of dollars)



Source: Statistics Canada, International Trade Division



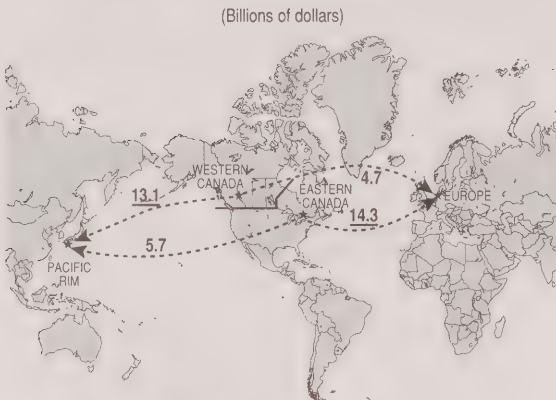
## MAJOR TRADE FLOWS

In 1998, four trade flows accounted for 78 per cent of exports to countries other than the US:

- eastern provinces to European countries: \$14.3 billion
- western provinces to Pacific Rim countries: \$13.1 billion
- eastern provinces to Pacific Rim countries: \$5.7 billion
- western provinces to European countries: \$4.7 billion.

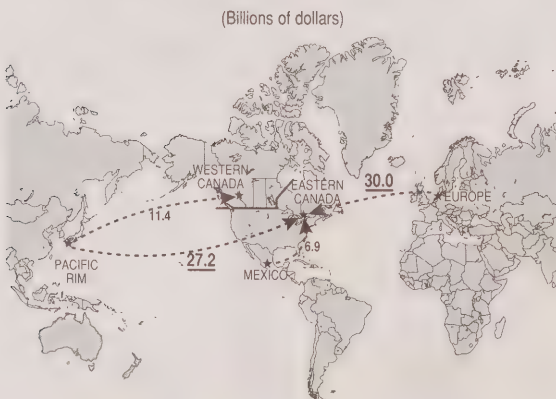
Figures 8-15 and 8-16 illustrate Canada's main trade flow with countries other than the US.

**FIGURE 8-15: EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1998**



Source: Transport Canada

**FIGURE 8-16: IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1998**



Source: Transport Canada

In terms of exports, the largest trade flow from the eastern provinces to European countries totalled \$14.3 billion. It was composed primarily of electric/electronic machinery and other equipment (\$3.1 billion), non-ferrous products (\$1.8 billion), forest and paper products (\$1.5 billion), and food products (\$1 billion). This trade was carried by water (60 per cent) and air (35 per cent). The flow from the western provinces to the Pacific Rim countries amounted to \$13.1 billion. Forest and paper products, food products and mineral fuels (e.g. coal) were the main traded goods and were carried almost exclusively by water (96 per cent).

In 1998, four trade flows represented nearly 80 per cent of goods imported from countries other than the US:

- European countries to the eastern provinces: \$30.0 billion
- Pacific Rim countries to the eastern provinces: \$27.2 billion
- Pacific Rim countries to the western provinces: \$11.4 billion
- Mexico to the eastern provinces: \$6.9 billion.

Imports to the eastern provinces from European countries represented the largest trade flow with overseas countries, totalling \$30 billion. The principal goods traded were electric/electronic machinery and other equipment (\$8.2 billion), chemical products (\$3.6 billion), mineral fuels (\$3.1 billion), motor vehicles and parts, food, and steel products. The modes used were marine (47 per cent), followed by air (30 per cent) and road (20 per cent).<sup>9</sup> In this case, the road figure is probably overestimated, as part of it covers transshipment via the US and the rest is distributed on marine and air modes.

Imports to the western provinces from the Pacific Rim countries totalled \$27.2 billion in 1998, and included machinery and equipment (\$6.8 billion), electric/electronic machinery (\$6.5 billion), steel products, motor vehicles and parts, and food processed products. Goods were shipped by road (40 per cent), water (30 per cent) and air (24 per cent). As mentioned previously, the road share is overestimated and would feed the marine and air modes.<sup>10</sup>

Tables 8-11 and 8-12 show the major trade flows between Canada and countries other than the US.

<sup>9</sup> Truck and rail information can be used to estimate the importance of Canada's trade with countries other than the US, routed through the US. With imports, however, such an estimate is more difficult to determine, as cargo control documents information may lead to some underestimation of Canadian imports by the marine and air modes.

<sup>10</sup> Please see notes 5 and 9.

**TABLE 8-11: CANADA'S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1998**

(Billions of dollars)

Exports to:	Origin		Total	Main modes used (Per cent of total value)
	Eastern provinces	Western provinces		
Europe	14.3	4.7	19.0	Marine (67), Air (29)
Pacific Rim <sup>1</sup>	5.7	13.1	18.7	Marine (82), Air (13)
Latin America <sup>2</sup>	3.3	1.7	5.0	Marine (55), Road (25)
Middle East and Africa	1.7	2.0	3.7	Marine (73), Air (17)
Mexico	0.7	0.7	1.5	Marine (42), Road (34)
Other	0.3	0.4	0.7	Marine (82), Air (13)
<b>TOTAL</b>	<b>26.1</b>	<b>22.5</b>	<b>48.6</b>	

<sup>1</sup> Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.<sup>2</sup> Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

**TABLE 8-13: CANADA/NON-US COUNTRIES TRADE, SHARE OF DUTIES ON GOODS IMPORTED FROM NON-US COUNTRIES**(Per cent)<sup>1</sup>

	1988	1992	1995	1998
Total goods	5.7	5.2	3.5	2.5
Selected goods:				
Vehicle and Parts	5.9	5.2	3.0	2.8
Machinery and Equipment	2.0	1.6	0.9	0.2
Electrical Machinery	4.1	2.9	1.6	0.5
Household	10.3	7.8	5.6	3.2
Paper and Other Products	5.5	4.9	3.8	1.4
Chemical Products	4.6	4.9	1.5	1.0
Plastic and Rubber Products	8.0	7.7	6.0	4.5
Iron and Steel Products	6.1	6.1	4.8	3.0
Non-metallic Products	8.7	6.9	5.9	2.6
Non-ferrous Products	4.9	4.0	2.4	1.5
Dairy Products	1.9	1.5	1.7	1.9

<sup>1</sup> Ratio of duties collected to total value of imported goods.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

**TABLE 8-12: CANADA'S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1998**

(Billions of dollars)

Imports from:	Destination		Total	Main modes used (Per cent of total value)
	Eastern provinces	Western provinces		
Pacific Rim <sup>1</sup>	27.2	11.4	38.6	Marine (39), Road (37)
Europe	30.0	3.8	33.8	Marine (45), Air (31)
Mexico	6.9	0.8	7.7	Road (83), Rail (8)
Latin America <sup>2</sup>	4.8	0.5	5.3	Marine (41), Road (40)
Middle East and Africa	3.1	0.2	3.4	Marine (70), Air (13)
Other	5.3	1.0	6.3	Marine (62), Air (23)
<b>TOTAL</b>	<b>77.3</b>	<b>17.7</b>	<b>95.0</b>	

<sup>1</sup> Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.<sup>2</sup> Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

## RECENT TRENDS

World economy and trade have been affected in recent years by financial crises and recessions that started in Japan and then spread to neighbouring Asian countries and Latin America. Canadian exports were significantly affected in 1998 as domestic exports to Japan and Asian APEC<sup>11</sup> (Asia-Pacific Economic Cooperation group) countries declined by over 25 per cent from their 1997 levels.

In 1999, economies of Asian APEC countries did not fully recover and remained sluggish. As a result, Canada's exports to Japan and other APEC countries decreased by 3.5 and 5.4 per cent, respectively, from 1998 levels. Canadian exports to other Latin American countries fell by 20 per cent from 1998 to 1999.

Over the same time, domestic exports to the US increased by over 14 per cent. By the end of 1999, Canada's exports to the US accounted for 87 per cent of total Canadian exports, compared with 81 per cent two years previously.

In 1999, imports to Canada from Japan and Asian APEC countries were strong, with a combined growth rate of nine per cent compared with that of 1998. This growth exceeded that of imports from the US, which stood at 5.7 per cent for the same period. Tables 8-14 and 8-15 reveal Canada's exports and imports by major country grouping over the 1998-1999 period.

## DUTIES ON IMPORTS

The influence of the General Agreement on Tariffs and Trade (GATT) was felt on goods imported from countries other than the US. From 1988 to 1998, the share of duties collected by Canada Customs on these goods dropped from 5.7 per cent to 2.5 per cent. Decreased duties paid on imported goods have been visible mainly since 1992.

Table 8-13 reveals the share of duties collected on selected imported goods from countries other than the US.

11 At the end of 1999, the Asia-Pacific Economic Cooperation group (APEC) had 21 members: besides Canada and the US, there were Australia, New Zealand and Papua New Guinea; Chile, Peru and Mexico; Brunei Darussalam, the People's Republic of China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam and Russia.

TABLE 8-14: CANADIAN EXPORTS BY COUNTRY GROUPINGS,  
1998 AND 1999

<i>Destination</i>	<i>1998</i> (Billions of dollars)	<i>1999</i> (Billions of dollars)	<i>Growth rate</i> (per cent)
US	251.1	286.8	14.2
Non-US countries	46.4	43.6	(5.8)
Japan	8.6	8.3	(3.5)
Other APEC <sup>1</sup>	10.7	10.1	(5.4)
Mexico	1.4	1.5	8.6
Other Latin America <sup>2</sup>	3.9	3.1	(20.3)
Western Europe	17.1	16.2	(5.4)
Other countries	4.7	4.5	(5.0)
<b>Total World</b>	<b>297.5</b>	<b>330.4</b>	<b>11.1</b>

Note: Preliminary data for 1999.

1 Including Australia, New Zealand and Papua New Guinea; Chile and Peru; Brunei Darussalam, People's Republic of China, Hong Kong, Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam and Russia.

2 Including Antilles, South and Central American countries, except Mexico, Chile and Peru.

Source: Statistics Canada, Cat. 65-001, December 1999

TABLE 8-15: CANADIAN IMPORTS BY COUNTRY GROUPINGS,  
1998 AND 1999

<i>Origin</i>	<i>1998</i> (Billions of dollars)	<i>1999</i> (Billions of dollars)	<i>Growth rate</i> (per cent)
US	203.5	215.1	5.7
Non-US countries	94.8	104.8	10.5
Japan	14.0	15.0	7.4
Other APEC <sup>1</sup>	25.7	28.1	9.2
Mexico	7.7	9.5	24.0
Other Latin America <sup>2</sup>	4.8	4.8	(0.7)
Western Europe	32.0	35.8	12.0
Other countries	10.6	11.6	8.9
<b>Total World</b>	<b>298.4</b>	<b>319.9</b>	<b>7.2</b>

Note: Preliminary data for 1999.

1 Including Australia, New Zealand and Papua New Guinea; Chile and Peru; Brunei Darussalam, People's Republic of China, Hong Kong, Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam and Russia.

2 Including Antilles, South and Central American countries, except Mexico, Chile and Peru.

Source: Statistics Canada, Cat. 65-001, December 1999

# TRANSPORTATION AND TOURISM

# 9

*Total tourism<sup>1</sup> spending in Canada in 1998 amounted to \$47.1 billion of which \$18.5 billion, or 39 per cent, was accounted for by expenditures on transportation.*

Travel within, to and from Canada generally increased in 1999 as the Canadian dollar appreciated slightly and as the performance of the Canadian economy improved. Domestic travel by Canadians, after increasing in 1998, also rose in the first three quarters of 1999. Canadians made more trips overseas, as well as overnight trips to the US in 1999, but made fewer same-day trips to the US.

In 1999, the number of visitors from the US to Canada increased, although at a slower pace than in 1998. More overseas visitors came to Canada in 1999; this included a recovery in the number of visitors from the Asia-Pacific region. Increased spending by foreign tourists in Canada meant that Canada's travel account deficit fell to \$1.9 billion in 1999, its lowest level since 1987.

Total tourism spending in Canada in 1998 amounted to \$47.1 billion, of which \$18.5 billion, or 39 per cent, were expenditures on transportation. Of total tourism spending in Canada, \$32.9 billion, or 70 per cent was spent by Canadians, and \$14.2 billion, or 30 per cent, was spent by foreign visitors.

## TOURISM EXPENDITURES

### TOURISM SPENDING IN CANADA

Tourism spending in Canada is made up of spending by Canadians and foreign visitors. Domestic demand refers to

spending by Canadians on tourism in Canada, as opposed to tourism exports, which refer to expenditures made by foreign visitors in Canada. Tourism commodities are those for which a significant amount of the demand comes from tourism expenditures.

In 1998, tourism spending in Canada reached \$47.1 billion, up seven per cent from 1997. This growth continued in 1999, with expenditures in the third quarter reaching \$18.3 billion, up six per cent from the same period in 1998. The relatively low value of the Canadian dollar meant both more domestic tourism and more international tourism expenditures in Canada.

### DISTRIBUTION OF SPENDING

Figure 9-1 shows the distribution of tourism spending in Canada for 1998. Canadians spent 70 per cent of the \$47.1 billion total expenditures on tourism, or \$32.9 billion, while foreign tourists spent 30 per cent. The foreign proportion of tourism spending continued to increase in 1998, up from 25 per cent in 1994 and 29 per cent in 1997.

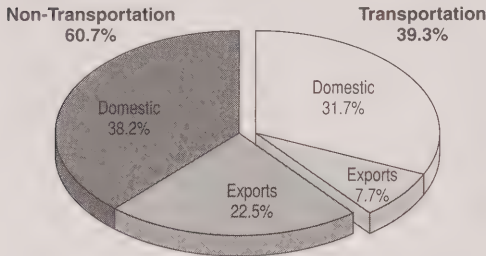
In the first three quarters of 1999, domestic demand strengthened compared with foreign expenditures. During the third quarter of 1999, domestic tourism expenditures rose 6.1 per cent over the same period in 1998, up from 3.5 per cent for the first quarter. The rate of increase in foreign spending fell to 6.7 per cent and 5.8 per cent for the second and third quarters of 1999, down from the 10 to 13 per cent increases for the previous five quarters.

<sup>1</sup> Tourism refers to people travelling to and staying in places outside their usual environment. These trips are for leisure, business and other purposes and do not last longer than one year. For Canadians within Canada, for a trip to be considered as tourist travel, it must be at least 80 kilometres from the traveller's place of residence. International travel refers to travel to or from Canada. This definition of tourism — a much broader than the common definition, which includes only leisure travel, often only to major destinations — is used by the United Nations World Tourism Organization, Statistics Canada and the Canadian Tourism Commission.



FIGURE 9-1: DISTRIBUTION OF TOURISM SPENDING IN CANADA, 1998

(Total \$47.1 billion)

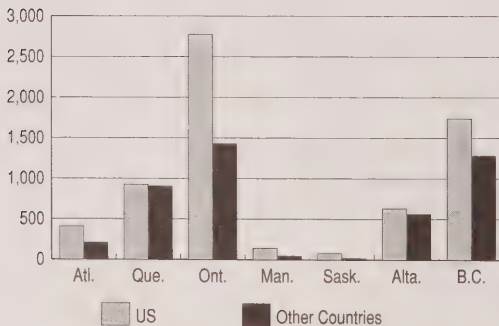


Source: Statistics Canada, Cat. 13-009-XPB

Figure 9-2 shows the distribution of tourism spending on overnight trips by non-residents in 1998. Tourism spending by this group increased in all regions of Canada in 1998. In Quebec, however, it rose only two per cent, compared with almost ten per cent or more in the other regions. Overseas tourism spending fell in Quebec. It also fell in Ontario and in Saskatchewan, where it has less importance than US tourist expenditures. Spending by Americans in Canada rose almost 15 per cent in both the Atlantic Provinces and Quebec, and by more than 20 per cent in all other regions. Overall, US residents accounted for 60 per cent of spending by non-residents in Canada and 75 per cent of all trips in 1999, up from 54 per cent and 72 per cent, respectively, in 1998.

FIGURE 9-2: TOURISM SPENDING ON OVERNIGHT TRIPS IN CANADA BY PROVINCE, 1998

(Millions of dollars)



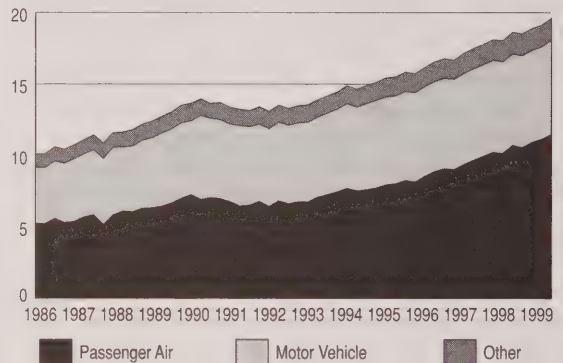
Source: Statistics Canada, Cat. 66-201

## SPENDING ON TRANSPORTATION

Tourism expenditures on transportation were \$18.5 billion in 1998, up five per cent from 1997 and accounting for 39 per cent of all tourism spending in Canada. Of this amount, \$10.6 billion, or 57 per cent, was spent on air transportation, an eight per cent increase from 1997. The other major spending category, motor vehicle transportation, made up 35 per cent of the total in 1998, compared with 37 per cent in 1997. This drop was due to lower fuel prices. Intercity bus and rail transportation remained unchanged from 1997, accounting for three per cent and one per cent, respectively, of tourism spending on transportation. Other forms of transportation spending, including water transport, urban transit, taxi and parking, made up four per cent.

Figure 9-3 shows the quarterly distribution of tourist spending on transportation from 1986 to 1999.

FIGURE 9-3: QUARTERLY DISTRIBUTION OF TOURISM SPENDING ON TRANSPORTATION, 1986 - 1999

(Billions of dollars, seasonally adjusted<sup>1</sup>)<sup>1</sup> Quarterly data at annual rates

Source: Statistics Canada, Cat. 13-009-XPB

## SUPPLY AND DEMAND

Table 9-1 shows demand and supply for tourist goods in Canada in 1998, as presented in Statistics Canada's National Tourism Indicators. Demand corresponds to expenditures on tourist goods, while supply corresponds to the production of those goods. The last column in Table 9-1 shows tourism spending (demand) as a percentage of an industry's output (supply).

TABLE 9-1: SUPPLY AND DEMAND OF TOURIST GOODS IN CANADA, 1998

	(Millions of dollars)			Demand as per cent of	
	Demand			Supply	supply
	Domestic	Exports	Total		
Transportation	14,897	3,613	18,510	41,247	45
Passenger Air Transport	8,577	2,004	10,581	11,381	93
Passenger Rail Transport	133	83	216	234	92
Interurban Bus Transport	407	189	596	654	91
Vehicle Rental	360	599	959	1,081	89
Vehicle Repairs and Parts	1,865	80	1,945	10,762	18
Vehicle Fuel	3,109	424	3,533	14,855	24
Other Transportation	446	234	680	2,280	30
Accommodation	3,561	3,159	6,720	7,205	93
Food and Beverage Services	4,426	3,290	7,716	32,868	23
Other Tourism Commodities	3,479	1,321	4,800	14,150	34
Total Tourism Commodities	26,363	11,383	37,746	95,470	40
Total Other Commodities	6,497	2,806	9,303		
<b>Tourism Expenditures</b>	<b>32,860</b>	<b>14,189</b>	<b>47,049</b>		

Source: Statistics Canada Cat. 13-009-XPB

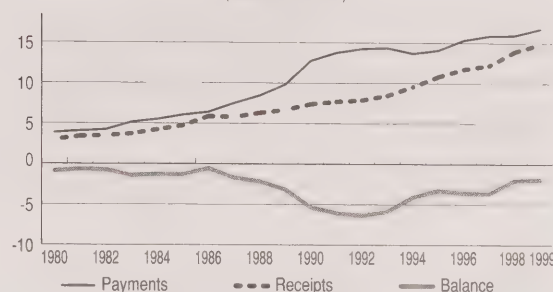
Tourism spending accounted for 45 per cent of all transportation spending by consumers and businesses in 1998. It made up a high proportion of expenditures for intercity transportation services and a lesser amount for expenditures related to local travel. Ninety-three per cent of air transportation receipts resulted from tourism spending. Similarly, a high proportion of spending for rail transport, intercity buses and vehicle rentals were accounted for by tourism. The proportion is much lower, around 20 per cent, for local transportation, including the operation of individually owned motor vehicles and spending on taxis and local transit, which are included under "Other Transportation" in Table 9-1.

## THE TRAVEL ACCOUNT AND INTERNATIONAL PASSENGER FARES

### TRAVEL DEFICITS

Canada's international travel account compares the value of spending by foreigners travelling in Canada against the value of spending by Canadians travelling outside Canada. A deficit occurs when Canadians are spending more outside Canada than foreigners are spending in Canada.

Figure 9-4 shows the trends in Canada's international travel account from 1980 to 1999. Canada's travel deficit in 1999 was the smallest since 1987, falling by 6.2 per cent to \$1.9 billion and continuing the decrease of 1998.

FIGURE 9-4: CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 - 1999  
(Billions of dollars)

Source: Statistics Canada, Cat. 13-009-XPB

Canadians spent a total of \$16.7 billion outside the country in 1999, up 5.1 per cent from 1998. Foreign travellers spent \$14.9 billion in Canada, a 6.7 per cent increase. Canadians travelling to the US increased their spending by 6.5 per cent to \$10.5 billion, while Americans increased their spending in Canada by 5.4 per cent to \$9.1 billion. Canada's travel deficit with the US rose 14.1 per cent to \$1.4 billion, while the deficit with other countries fell to \$485 million. This is because Canadians increased their overseas spending only by 2.7 per cent to \$6.2 billion and overseas visitors increased their expenditures in Canada by 8.8 per cent to \$5.7 billion.

### INTERNATIONAL PASSENGER FARES

In 1999, Canadians purchased \$3.73 billion worth of passenger fares from foreign carriers. In turn, Canadian carriers sold \$2.67 billion in passenger fares to foreign travellers, which left a deficit of \$1.06 billion in this account. Air fares accounted for almost all these transactions. Canadians purchased \$3.65 billion in air fares from foreign carriers, while Canadian air carriers sold \$2.63 billion in air fares to foreign travellers. For land transportation, Canadians spent \$76 million on passenger fares from foreign carriers, while foreign travellers spent \$36 million on fares from Canadian carriers. Passenger fares for water transportation are included with air fares, and they represent an amount smaller than those for land.

## TRAVEL OVERVIEW

Table 9-2 shows a summary of Canadian travel, which is made up of domestic travel (travel by Canadians in Canada) and international travel (travel by Canadians outside the country and travel to Canada by visitors from other countries).

**TABLE 9-2: DOMESTIC AND INTERNATIONAL TRAVEL IN CANADA, 1998 – 1999**

	1999	1998			
	Person-trips (000)	Person-trips (000)	Duration (nights)	Average distance (km)	Average spending (\$)
Domestic	144,257	144,257	1.7	293	132
Same Day	69,847	69,847	-	149	52
Intraprovincial	66,545	66,545	-	144	49
Interprovincial	3,302	3,302	-	236	112
Overnight	74,409	74,409	3.3	430	206
Intraprovincial	59,511	59,511	2.8	270	134
Interprovincial	14,898	14,898	5.4	1,069	194
International	95,556	95,049			
Canadians	46,344	46,985	-	-	312
to US	42,087	42,768	-	-	206
Same day	28,043	29,346	-	-	32
Overnight	14,044	13,426	7.4	-	588
to other countries	4,256	4,218	17.1	-	1387
Americans	44,793	43,857	-	-	191
Same day	29,486	28,968	-	-	57
Overnight	15,307	14,890	3.7	-	450
Non-US residents	4,419	4,207	-	-	-
Same day	197	229	-	-	43
Overnight	4,222	3,978	10.9	-	1134

Source: Statistics Canada, International Travel Survey and Canadian Travel Survey

## DOMESTIC TRAVEL

In 1998, Canadians made 144.3 million trips that were considered tourist travel in Canada. This is a 13 per cent increase from the 128 million trips taken in 1997. Both same-day and overnight trips increased by about the same percentage. The increase in domestic trips continued in 1999. In the first three quarters, Canadians made 115.3 million domestic person-trips — a 3.9 per cent increase over the same period in 1998. An overview of domestic travel in Canada for 1998 is presented in Table 9-2.

In 1998, 74.4 million, or just over half (51 per cent), of all person-trips were for more than one night, whereas 69.9 million trips were completed on the same day. Of the overnight trips, 59.5 million, or 80 per cent, were to a destination within the same province, which is unchanged from 1997. The average one-way distance for all domestic trips was 293 kilometres. Overnight interprovincial trips went the farthest, with an average of 430 kilometres, and lasted the longest, with an average of 5.4 nights.

## DISTRIBUTION OF TRAVEL BY PROVINCE

The distribution of travel volumes by province is reflective of the provincial distribution of the Canadian population, as shown in Table 9-3. In 1998, Ontario, the most populous province, was the destination for 36 per cent of all domestic trips made, followed by Quebec with 21 per cent, Alberta with 14 per cent and British Columbia with 11 per cent. The number of trips taken by provincial residents also closely followed the relative provincial population size. The two provinces with the largest differences between the relative population size and the number of trips taken was Alberta, with about five per cent more trips than its relative population size would indicate, and Quebec, with about five per cent fewer trips. On a per-capita basis, each Canadian took 4.8 trips in 1998. Residents of Prince Edward Island had the lowest travel rate, at 3.2 trips per year, while those living in the Prairie Provinces, New Brunswick and Nova Scotia travelled more than the national average.

**TABLE 9-3: DISTRIBUTION OF DOMESTIC TRAVEL BY PROVINCE, 1998**

	(Thousands of person-trips)					
	Province of destination	Share of total (%)	Province of origin	Share of total (%)	Population	Trips per capita
Canada	144,257		144,357		30,297	4.8
Newfoundland	2,552	1.8	2,498	1.7	546	1.8
Prince Edward Island	811	0.6	527	0.4	137	0.5
New Brunswick	6,467	4.5	6,450	4.5	936	3.1
Nova Scotia	4,101	2.8	3,908	2.7	753	2.5
Quebec	30,116	20.9	29,578	20.5	7,335	24.2
Ontario	51,393	35.6	52,435	36.3	11,414	37.7
Manitoba	6,040	4.2	6,304	4.4	1,138	3.8
Saskatchewan	7,529	5.2	7,526	5.2	1,026	3.4
Alberta	19,576	13.6	20,153	14.0	2,910	9.6
British Columbia	15,499	10.7	14,868	10.3	4,003	13.2

Source: Statistics Canada, Canadian Travel Survey

## PURPOSE OF TRAVEL

The reasons behind Canadians' travel in Canada did not change significantly in 1998. As in 1997, most trips were either to visit friends or relatives, or for pleasure, accounting for 36 and 37 per cent, respectively, of total trips in 1998. Travelling for business and attending conventions made up only 14 per cent of all domestic trips, although this category accounts for a significant percentage of all spending. Personal reasons, such as for health or religion, were the main purpose behind 13 per cent of domestic trips.



## MEANS OF TRAVEL

As Table 9-4 shows, the automobile is the most common means of transportation in Canada, accounting for 91.7 per cent of all trips taken in 1998, virtually unchanged from 1997. The automobile accounted for 96.1 per cent of same-day trips compared with 87.5 per cent of overnight trips. The second most important means of transportation is the airplane, which accounted for 4.5 per cent of all travel. Air travel was particularly important for overnight business, accounting for 30.5 per cent of all trips. Compared with 1997, however, the share of automobile travel for overnight business increased by 2.5 per cent and, consequently, the share of airplane and bus travel showed small decreases.

**TABLE 9-4: DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1998**

(Per cent of person-trips 80 km +)

	Total	Same day	Overnight, primary purpose		
			Total	Non-Business	Business
Car	91.7	96.1	87.5	90.5	65.0
Plane	4.5	0.5	7.7	4.7	30.5
Bus	2.4	2.0	2.8	2.9	2.2
Rail	0.6	0.2	1.0	0.9	1.5
Boat	0.4	0.2	0.6	0.5	-
Other	0.4	1.0	0.4	0.5	0.0
Total	100.0	100.0	100.0	100.0	100.0

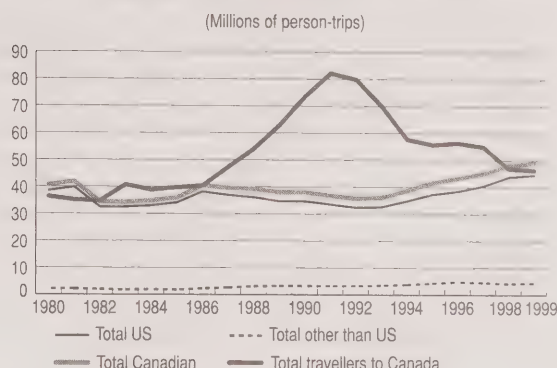
Source: Statistics Canada, Canadian Travel Survey

## INTERNATIONAL TRAVEL

Figures for international travel in 1999, by both Canadians and non-residents, are shown in Table 9-2. In 1999, 95.6 million international travellers crossed Canadian borders, a 0.5 per cent increase from 1998. Overall, the number of Canadians who took international trips fell 1.4 per cent to 46.3 million. Trips by Canadians to the US showed a 1.6 per cent decrease, while the number of Canadians travelling overseas increased just less than one per cent. Americans took 44.8 million person-trips, or 2.1 per cent more trips, to Canada in 1999 than in 1998. The number of trips to Canada by other nationalities rose five per cent to 4.4 million.

Figure 9-5 shows a steady increase in past years since 1992 of Americans coming into Canada and a decline in international travel by Canadians.

**FIGURE 9-5: INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 - 1999**

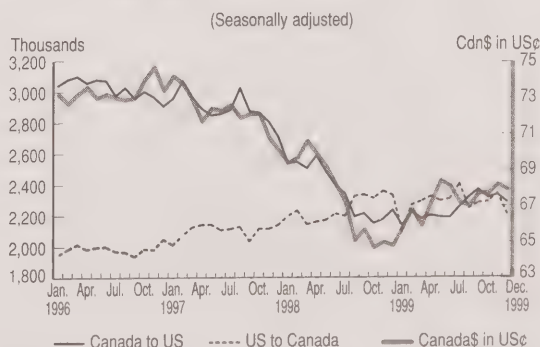


Source: Statistics Canada, Cat. 66-201

## CANADA/US TRAVEL

Figures 9-6 and 9-7 show trends in Canada/US travel. Travel between Canada and the US accounted for 91 per cent of all international trips in 1998. The most significant portion of Canada/US travel is same-day trips by automobile, which account for 63.8 per cent of all trips between the two countries. After the dollar reversed its decline in mid-1998, the number of Canadians visiting the US, both overnight and same-day, showed a similar reversal in decline. In addition, the number of same-day visits by Americans to Canada has levelled off, but the number of overnight visits has increased steadily. Compared with 1998, same-day visits by Canadians to the US fell 4.4 per cent in 1999 to 28.0 million, well below the 18.1 per cent drop in 1998. Overnight visits rose 4.6 per cent to 14.0 million, a reversal from the 11.2 per cent drop the previous year. Same-day trips by Americans to Canada rose 1.8 per cent to 29.5 million and overnight trips rose 2.8 per cent to 15.3 million.

**FIGURE 9-6: SAME-DAY CANADA/US AUTOMOBILE EXCURSIONS, 1996 - 1999**

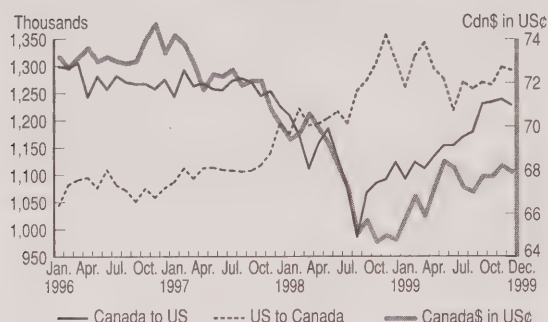


Source: Statistics Canada, Cat. 66-201



FIGURE 9-7: OVERNIGHT CANADA/US EXCURSIONS, 1996 – 1999

(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

### Distribution of Travel

Although the number of Canadians visiting the US in 1998 declined 14 per cent from 1997, the states that Canadians visited most often in past years continued to be the most popular. Of total same-day visits in 1998, New York and Michigan accounted for 18 per cent and nine per cent, respectively, while Pennsylvania and Washington each accounted for six per cent. The most popular states for overnight stays in 1998 were New York, with 12 per cent of the total trips, Florida with nine per cent, Washington at eight per cent, Michigan with seven per cent, and California with six per cent. In 1998, while overnight trips to Florida and California increased by ten per cent and seven per cent, respectively, trips to New York declined by nine per cent.

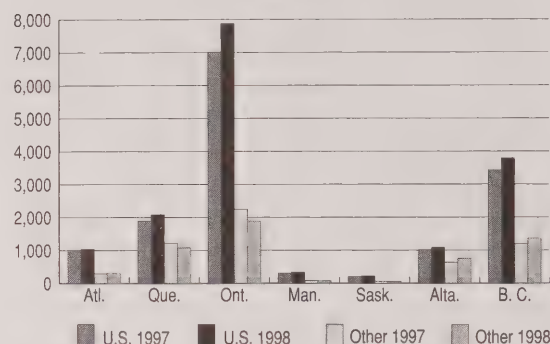
Ontario was by far the most popular province for Americans travelling to Canada, accounting for 47 per cent of the overnight trips charted in Figure 9-8. British Columbia accounted for 25 per cent and Quebec for 15 per cent, while nine per cent went to Alberta and seven per cent to the Atlantic Provinces.

### Purpose of Travel

In 1998, pleasure, including recreation and holiday, was the primary reason for 52 per cent of Canadians' overnight trips to the US and 57 per cent of Americans' overnight trips to Canada. Visiting friends and relatives was the reason for 20 per cent of Canadian trips and 16 per cent of American trips. Business was the main reason for 19 per cent of Canadian trips and 16 per cent of American trips, while personal reasons, such as health and religion made up the remaining nine per cent of both Canadian and American trips.

FIGURE 9-8: DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1997 and 1998

(Thousands of visits)



Source: Statistics Canada, Cat. 66-201

### Means of Travel

Table 9-5 shows that automobile trips were the most important part of Canada/US same-day travel. In 1999, 96.5 per cent of the same-day trips that Canadians made to the US were by automobile, and 93.3 per cent of these trips made by Americans to Canada were also by automobile. Bus travel accounted for 2.5 per cent of Canadian same-day trips and 3.4 per cent of American trips.

TABLE 9-5: CANADA/US TRAVEL BY TRANSPORTATION MODE, 1999

(Thousands of person-trips)

	Canadians		Americans	
	Total	Per cent	Total	Per cent
<b>Same Day</b>	28,043	100.0	29,486	100.0
Auto	27,067	96.5	27,497	93.3
Plane	147	0.5	476	1.6
Bus	699	2.5	1,003	3.4
Other	130	0.5	510	1.7
<b>Overnight</b>	14,044	100.0	15,307	100.0
Auto	7,857	55.9	9,602	62.7
Plane	4,911	35.0	3,790	24.8
Bus	692	4.9	814	5.3
Boat	106	0.8	385	2.5
Foot	353	2.5	562	3.7
Other	126	0.9	153	1.0
<b>Total</b>	<b>42,087</b>		<b>44,793</b>	

Source: Statistics Canada, Cat. 66-201

For overnight trips in 1999, Table 9-5 shows that automobile travel was less dominant but still the most important mode of travel: 55.9 per cent of the overnight trips by Canadians and 62.7 per cent of those by Americans were made by automobile. Air is the next

most important mode for overnight travel, accounting for 35.0 per cent of Canadian trips and 24.8 per cent of American trips.

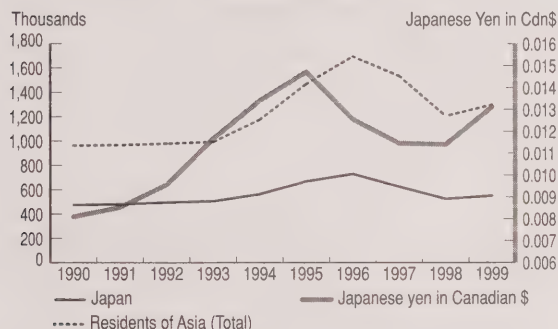
## TRAVEL BETWEEN CANADA AND COUNTRIES OTHER THAN US

### Overseas Travel to Canada

Overall, the number of visitors from overseas countries rose 5.2 per cent to 4.4 million in 1999, after falling 8.3 per cent in 1998. Figure 9-9 shows that the number of visitors from Asia rose 7.6 per cent to 1.3 million in 1999, reversing the decline of 21.4 per cent in 1998. The number of Japanese visiting in 1999 rose 4.9 per cent, after declining 16.0 per cent in 1998 as the Japanese yen rose 15.0 per cent. The number of visitors from South Korea and Taiwan soared 50.5 and 24.8 per cent, respectively, after falling 59.0 and 14.7 per cent in 1998.

FIGURE 9-9: VISITORS TO CANADA FROM ASIA, 1990 – 1999

(Thousands of visits)



Source: Statistics Canada, Cat. 66-201; Bank of Canada

Figure 9-10 shows that the number of visitors from Europe also reversed the decline of 1998, rising 4.1 per cent after falling 2.4 per cent in 1998. In 1999, all major countries in Europe other than Switzerland showed increases in visitors to Canada. Visitors from France and Germany increased 2.9 per cent and 2.7 per cent respectively, while visitors from the UK increased 4.5 per cent. The increase in visitors from Europe has occurred despite a decline in the value of the European currencies.

FIGURE 9-10: VISITORS TO CANADA FROM EUROPE, 1990 – 1999

(Thousands of visits)



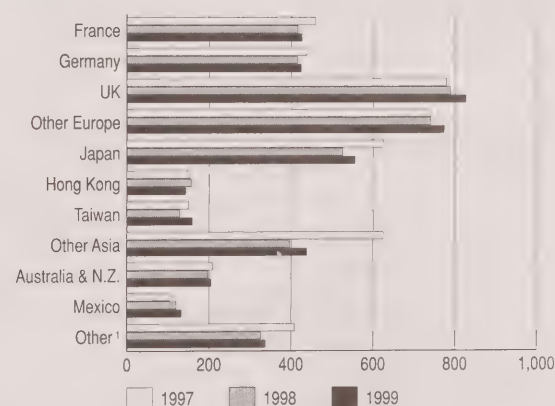
Note: Indices for exchange rates are foreign currencies in terms of C\$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

Figure 9-11 shows the origin of the visitors to Canada in recent years.

FIGURE 9-11: VISITORS FROM COUNTRIES OTHER THAN THE UNITED STATES BY REGION, 1997 – 1999

(Thousands)



1 Mexico, Caribbean, Central and South America and Africa.

Source: Statistics Canada, Cat. 66-201

## Distribution of Travel

Ontario remains the most popular destination for international visitors, being the destination of 47 per cent of all overseas visits. British Columbia was the second most popular with 25 per cent. Visits by Americans increased in all regions of Canada in 1998. Overseas visits declined 16.5 per cent in Ontario, 12.0 per cent in Quebec, and about ten per cent in Manitoba and Saskatchewan. They did, however, rise 19 per cent in Alberta, 14.8 per cent in British Columbia, and three per cent in the Atlantic Provinces. Figure 9-8 shows the destination by provincial region for overseas visitors staying at least one night.

## Canadian Travel Overseas

In 1999, Canadians only marginally increased their overseas trips after increasing them by 5.9 per cent in 1998 and by 8.5 per cent 1997. In 1998, Canadians increased their travel to Europe: 16.2 per cent to continental Europe, 14.7 per cent to Europe and the UK, and 4.7 per cent to the UK. Travel to the Caribbean declined slightly, whereas travel to Central and South America fell 15.2 per cent. Cruise travel continued to increase, rising 18.8 per cent, following a 27.6 per cent rise in 1997. Figure 9-12 shows that Europe remains the most popular overseas destination for Canadians, accounting for 42 per cent of total overseas trips. The Asian financial crisis continued to affect trips to the Far East, which fell 3.1 per cent in 1998.

## Reasons for Overseas Travel

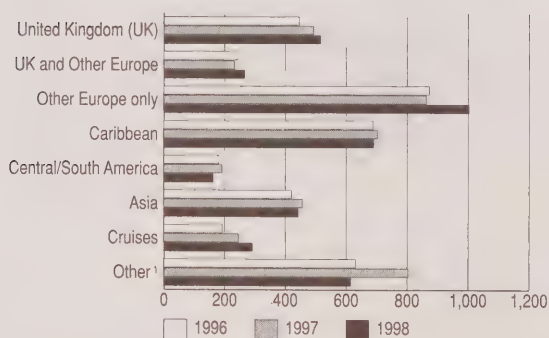
Travelling for pleasure is the most common reason for overseas travel. In 1998, it accounted for 57 per cent of Canadian overseas travel and 50 per cent of travel to Canada from overseas visitors. Visiting friends and relatives was the main purpose of 20 per cent of Canadian overseas travel and 27 per cent of overseas travel to Canada. Business travel was the reason for 18 per cent of overseas travel in both directions. All three types of travel — pleasure, visiting and business — increased for Canadians but decreased for overseas travellers to Canada in 1998.

## Means of Travel

Virtually all international travel to and from overseas countries is by air, although about 20 per cent of overseas visitors entered Canada by surface transportation from the US in 1998. Thirty-eight per cent of non-Americans coming to Canada by air entered via the US in 1999, up from the 33 per cent of the past two years. Fifteen per cent of Canadians returning by air from countries other than the US returned via the US in 1999. This percentage has been stable in recent years.

FIGURE 9-12: CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1996 – 1998

(Thousands)



<sup>1</sup> St. Pierre & Miquelon, Caribbean, Mexico and Oceania (including Australia).

Source: Statistics Canada, Cat. 66-201

# TRANSPORTATION INFRASTRUCTURE 10

*Efforts are continuing to make Canada's transportation infrastructure more modern, more efficient and sustainable. In 1999, further rationalizations, transfers and changes of ownership improved productivity in several cases while maintaining or improving safety.*

Transportation infrastructure plays a vital role in the country's economy by keeping people and goods moving — across the country and internationally. It is a vast network of roads, railways, airports, ports and waterways that stretch from coast to coast and to the far north.

This chapter highlights the events and issues relating to Canada's transportation infrastructure, and describes the most current status of its major elements by mode.

## RAIL TRANSPORTATION INFRASTRUCTURE

In 1999, Canadian railways operated slightly less than 50,000 route-kilometres of track. This was a decline of less than one per cent over the previous year, mainly as a result of discontinuances. While the total extent of the system remained essentially unchanged, the character of the industry continued to evolve rapidly.

As illustrated in Table 10-1, CN's Canadian network was reduced by over eight per cent during 1999, with its route-kilometres dropping below 40 per cent of the industry total. CPR's network also shrank, though by somewhat less, bringing its network to less than 30 per cent of the total for all Canadian railways.

In contrast to the decline in the Class I<sup>1</sup> carrier network, the Canadian shortline industry continued its pattern of strong growth. In 1999, the regional and shortline network grew by just over 12 per cent from 1998, and represented 30 per cent of the entire Canadian rail network. With the completion of CN's and CPR's most recent three-year

TABLE 10-1: RAILWAYS IN CANADA, 1999

	1999 owned/ leased route kilometres	1998 owned/ leased route kilometres	Per cent of total (1999)	Percentage change over previous year
CN	19,448	21,263	39.0	(8.5)
CPR	14,671	15,034	29.4	(2.4)
Regional and Shortline Railways	14,987	13,238	30.1	13.2
All Others <sup>1</sup>	732	688	1.5	6.4
Total	49,839	50,222		(0.8)

<sup>1</sup> Terminal and switching railways, Canadian subsidiaries of US railroads, and passenger and commuter railways.

Source: Transport Canada

rationalization plans, the regional/shortline segment should account for over 35 per cent of the Canadian system, while CN and CPR together should account for about 65 per cent, but only when done.

## RATIONALIZATION

Railway rationalization refers to the ways a railway/carrier can deal with track that is no longer economically viable. Typically, the rationalization of the Canadian rail system has taken the form of transfers of lines to other, smaller carriers, or through the discontinuance of operations over certain lines, usually when all other avenues have been explored. The principal consideration behind rail rationalization is the need to reduce the costs of services being offered.

In the case of line transfers, lines that are considered to be marginally economical from a carrier perspective may be offered for sale to another carrier to allow service over

<sup>1</sup> Class I railways are generally defined to include CN and CPR, as well as VIA Rail Canada. Class II railways include those known variously as regional and shortline railways, while Class III railways encompass those activities that are principally confined to terminals or bridges.



these lines to continue. In practice, it is usually the Class I carriers, CN and CPR, that offer lines for sale or lease to potential shortline operators. Shortline operators generally have lower operating costs than Class I carriers, mainly because of lower costs for labour. Shortline operators also tend to improve the level of service to shippers on their lines, which often improves their overall revenue stream.

In addition to the transfer of lines to another carrier, occasionally a Class I carrier will create an "internal" shortline that simulates many of the features of an operation transferred to another carrier. The objectives are the same — to reduce costs and improve the revenue stream — but the assets remain the property of the same Class I carrier. Typically, special agreements are struck with labour to facilitate the development of these "internal" shortlines.

Discontinuances represent another, though less frequent, form of rationalization. Under the *Canada Transportation Act, 1996*, rail lines proposed for discontinuance must go through a statutory process of first being offered for sale to

potential commercial operators, and, failing that, to levels of government. Only after all opportunities for continued commercial operation or transfers to governments have been exhausted, are railways permitted to discontinue services over a line.

During 1999, approximately 82 per cent of the 2,062 kilometres of track rationalized by CN and CPR were transferred to other operators. Only about 378 kilometres of line were discontinued in 1999, compared with 505 kilometres in 1998 and 955 kilometres in 1997. As shown in Table 10-2, which illustrates rationalization activity by province for 1999, CN had by far the greatest amount of transfer activity, as well as the greatest amount of rationalization activity in general.

In 1999, Alberta once again dominated rationalization activity, with over 50 per cent of discontinuances and transfers. As in 1998, transfers accounted for the bulk of rationalization activity in that province. During 1999, almost 55 per cent of line transfers to other operators

FIGURE 10-1: CHANGES IN CANADA'S RAIL NETWORK, 1999



Source: Transport Canada

TABLE 10-2: CN AND CPR RATIONALIZATION<sup>1</sup> BY PROVINCE, 1999

		(Route-kilometres)							
		B.C.	ALTA.	SASK.	MAN.	ONT.	QUE.	N.B.	Total
Discontinuances	CPR	0	110	104	0	0		0	214
	CN	0	0	143	0	5	15	0	163
	Total	0	110	248	0	5	15	0	378
Transfers	CPR	0	0	115	0	33	0	0	148
	CN	0	993	0	419	45	190	0	1,647
	Total	0	993	115	419	78	190	0	1,795

1 Excludes spur kilometres.

Source: Transport Canada

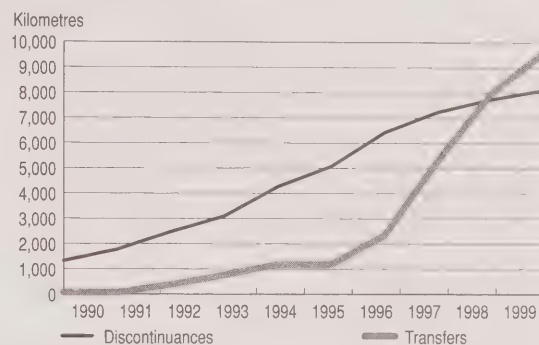
occurred in Alberta, while another 23 per cent took place in Manitoba. The large amount of track transferred in Alberta involved two carriers — one an existing RaiLink<sup>2</sup> operating division and the other, Alberta RailNet Inc., a subsidiary of North American RailNet Inc. The higher proportion of rationalization activity in western Canada (85 per cent of all transfers and discontinuances) than in eastern Canada is not surprising, given that until recently, the western Canadian network was under an abandonment prohibition for many years.

While CN accounted for virtually all of the transfer activity in 1999, discontinuances were roughly similar for both carriers. Although the amount of trackage discontinued in 1999 was not large, two thirds of it was in Saskatchewan. Figure 10-1 illustrates the CN and CPR rationalization activity that occurred on the rail network in 1999 and, where applicable, the names of the new carriers to which the track was transferred.

The pace of rail line discontinuances continued to decline, with 1999 being the third consecutive year in which the amount of track discontinued fell. On the other hand, transfers continued to occur at a strong rate.

Figure 10-2 charts these two methods of rationalization in terms of cumulative activity over the past decade. During this period, cumulative transfers to other rail operators surpassed cumulative discontinuances of lines. The rate of transfers after 1996 was particularly dramatic.

FIGURE 10-2: CUMULATIVE CN AND CPR RATIONALIZATION, 1990 – 1999



Source: Transport Canada

Table 10-3 shows the provincial distribution of this rationalization activity over the same ten-year period. Ontario has experienced the greatest amount of rail line discontinuance with approximately 22 per cent of total Canadian trackage discontinued. Close behind is Saskatchewan at 20 per cent. During this decade, 25 per cent of all the track transferred to other operators occurred in Alberta, while Manitoba, Ontario and Quebec each accounted for about 18 per cent. Ontario, Alberta and Quebec experienced similar amounts of total rationalization activity, with approximately 18 per cent of overall activity.

TABLE 10-3: CN AND CPR RATIONALIZATION BY PROVINCE, 1990 – 1999

		(Route-kilometres)									
		British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	New Brunswick	Nova Scotia	Territories	Total
Discontinuances	CPR	510	585	966	137	394	786	429	242	0	4,049
	CN	5	216	672	847	1,428	514	79	227	87	4,075
	Total	516	802	1,637	984	1,822	1,300	508	469	87	8,125
Transfers	CPR	365	216	150	0	827	765	191	85	0	2,599
	CN	0	2,225	544	1,730	799	1,010	328	378	122	7,136
	Total	365	2,440	694	1,730	1,625	1,776	519	463	122	9,735
Total	CPR	875	801	1,115	137	1,221	1,551	620	328	0	6,648
	CN	5	2,441	1,216	2,577	2,227	1,524	407	604	210	11,211
	Total	880	3,242	2,331	2,714	3,448	3,075	1,027	932	210	17,859

Source: Transport Canada

2 In 1999, RaiLink was purchased by Rail America. For further details, see the "Structure of Transportation Industry" chapter of this report.

### THREE-YEAR PLANS

Railways must make plans publicly available that indicate what discontinuances and transfers they plan to undertake over a three-year horizon. These plans are updated periodically. The most current plans for CN and CPR are dated November 30, 1999, and December 18, 1999, respectively.

In the remainder of their current three-year plans, CN and CPR have proposed to discontinue about 1,250 kilometres of track, of which 55 per cent is in Saskatchewan and almost 40 per cent is in Ontario. They have also proposed 1,150 kilometres of track for transfer, with about 35 per cent of this total in each of Ontario and Saskatchewan. Table 10-4 shows the amount of track proposed for discontinuance and transfer in the balance of the railways' current three-year plans.

**TABLE 10-4: PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE**  
(Route-kilometres)

		B.C.	ALTA.	SASK.	MAN.	ONT.	QUE.	N.B.	Total
Discontinuances	CPR	9	68	385	0	87	3	13	564
	CN	0	0	295	40	227	0	0	562
	Total	9	68	680	40	314	3	13	1,126
Transfers	CPR	0	0	407	112	176	39	0	734
	CN	168	0	0	0	123	0	0	292
	Total	168	0	407	112	299	39	0	1,025

Source: Transport Canada

In aggregate, approximately 45 per cent of all rationalization activity proposed for the balance of the railways' current three-year plans is expected to occur in Saskatchewan. A further 35 per cent is proposed for Ontario. The remaining provinces have relatively minor amounts of track to be rationalized and most of it is proposed for transfer.

The amount of track operated by CN and CPR, relative to the total network, has declined rapidly in recent years from a level that had been more or less stable at approximately 90 per cent for many years to less than 70 per cent now. It is expected that with the completion of their current three-year plans, CN and CPR will account for approximately 65 per cent of the network, while shortline and regional railways will account for the remainder.

## ROAD TRANSPORTATION INFRASTRUCTURE

The 1997 and 1998 Transport Canada annual reports presented a breakdown by province and territory of the over 900,000 kilometres of Canadian roads and highways. Because it was not possible to obtain more recent information on the overall road system for this year, this report's emphasis is on the National Highway System (NHS) and traffic levels.

### NATIONAL HIGHWAY SYSTEM

The National Highway System is a network of roads identified by the Council of Ministers Responsible for Transportation and Highway Safety during a multi-stage policy study launched in September 1987. The goals of this study were to identify future needs and define standards for a Canadian primary highway system of national significance; establish the benefits and costs of meeting these needs; and establish the necessary funding arrangements between governments.

A number of criteria were used to select highways for inclusion in the National Highway System. The highways had to be existing primary routes that provide interprovincial and international trade and travel by connecting (as directly as possible) a capital city or major provincial population or commercial centre in Canada with:

- another capital city or major population centre;
- a major point of entry or exit to the US highway network; or
- another transportation mode served directly by the highway mode.

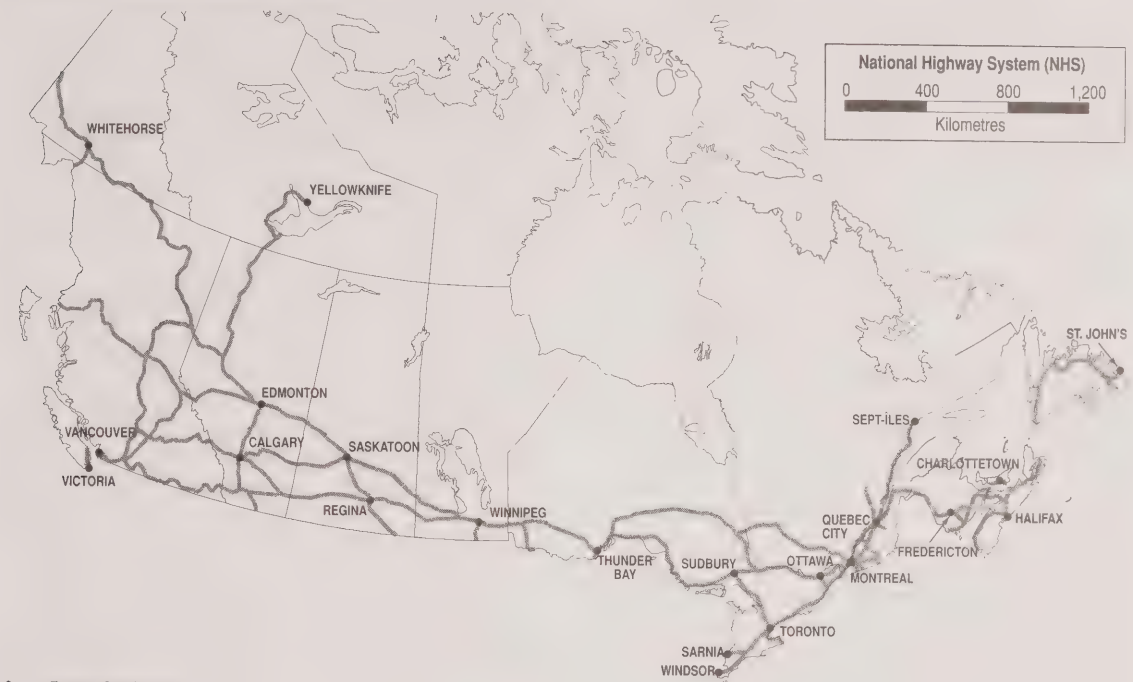
This defined principal highway network, which is illustrated in Figure 10-3, is nearly 24,500 kilometres in length.

### TRAFFIC LEVELS

The National Highway System is a small percentage of the public road and street network in Canada. It is, however, heavily used, accounting for nearly one quarter of the total vehicle-kilometres driven. Table 10-5 illustrates vehicle traffic levels on the National Highway System by province for the years 1986, 1993 and 1996.

Nearly 80 billion vehicle-kilometres were generated in 1996, up almost nine per cent from 1993 and almost 40 per cent from 1986. This equates to a 3.3 per cent average annual growth rate in vehicle traffic for the period. In 1996, Ontario and Quebec together accounted for over

FIGURE 10-3: NATIONAL HIGHWAY SYSTEM



Source: Transport Canada

60 per cent of the total vehicle-kilometres on the National Highway System, with Ontario alone generating 36 per cent of the total and Quebec 25 per cent. These were the only two provinces to have a vehicle-kilometres' share greater than their share of the National Highway System network. The next heaviest travelled province was British Columbia, which generated 11 billion vehicle-kilometres in

1996, or 14 per cent of the total. This in turn was followed by Alberta at 8.4 billion, or nearly 11 per cent of the total travel. Saskatchewan represented nearly four per cent of total travel, followed by Nova Scotia with 3.4 per cent, New Brunswick with about three per cent, Manitoba with nearly two per cent, and Newfoundland and Prince Edward Island together with two per cent of the total.

TABLE 10-5: VEHICLE TRAFFIC LEVELS ON THE NATIONAL HIGHWAY SYSTEM, 1986, 1993 AND 1996

	Network length (000s)	Vehicle-kilometres (billions)			AAGR <sup>1</sup> v-km 1986- 1996	Percentage distribution				Annual Average Daily Traffic (AADT)		
		1986	1993	1996		Network length	1986	1993	1996	1986	1993	1996
Newfoundland	0.9	0.7	0.8	1.3	6.7	3.9	1.2	1.0	1.7	2,000	2,200	3,800
Prince Edward Island	0.1	0.1	0.2	0.2	5.3	0.5	0.2	0.2	0.3	3,100	3,900	5,200
Nova Scotia	0.9	1.8	2.2	2.7	4.1	3.6	3.1	3.1	3.4	5,600	7,000	8,300
New Brunswick	1.0	2.0	2.2	2.3	1.5	4.1	3.5	3.0	2.9	5,500	6,100	6,400
Quebec	3.0	13.9	18.5	19.6	3.5	12.1	24.4	25.4	24.8	12,900	17,200	18,200
Ontario <sup>2</sup>	5.0	20.3	26.5	28.7	3.5	20.5	35.5	36.4	36.2	11,100	14,600	15,700
Manitoba	0.9	1.2	1.3	1.5	2.5	3.5	2.1	1.8	1.9	3,700	4,200	4,800
Saskatchewan	2.1	2.4	2.8	3.1	2.5	8.6	4.2	3.9	3.9	3,100	3,700	4,000
Alberta	3.5	6.3	7.6	8.4	3.0	14.5	10.9	10.4	10.7	4,900	5,900	6,500
British Columbia	5.4	8.3	10.5	11.0	2.8	22.0	14.6	14.4	13.9	4,300	5,400	5,600
Yukon	1.1	0.2	0.2	0.2	2.0	4.4	0.3	0.3	0.3	500	500	600
Northwest Territories	0.6	0.04	0.04	0.1	6.3	2.4	0.1	0.1	0.1	200	200	300
<b>Canada</b>	<b>24.4</b>	<b>57.3</b>	<b>72.9</b>	<b>79.2</b>	<b>3.3</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>6,400</b>	<b>8,200</b>	<b>8,900</b>

<sup>1</sup> AAGR = Average Annual Growth Rate.<sup>2</sup> Data for Ontario for 1996 are estimated.

Source: Traffic information supplied by provincial/territorial highways departments



In terms of annual average daily traffic (AADT), Ontario's and Quebec's portions of the National Highway System were very heavily travelled, averaging over 15,000 vehicles per day in Ontario and over 18,000 vehicles per day in Quebec. The next busiest on average was Nova Scotia, with over 8,000 vehicles per day, followed by Alberta and New Brunswick each with 6,500 cars and trucks per day. The remaining provinces each averaged less than 6,000 vehicles per day on their particular sections of the National Highway System.

Figure 10-4 illustrates how substantially vehicle traffic varies by geographic location. Daily car and truck volumes are depicted in two ways in this figure: traffic ranges and traffic bands. In traffic ranges, a particular shade of gray is assigned to a defined traffic interval (i.e. black represents road sections having less than 5,000 vehicles per day). In traffic bands, line thickness is proportional to the level of traffic passing over a section of road.

Vehicle traffic is heavily concentrated around major urban areas in Canada, especially Toronto, Montreal and Vancouver, and is distributed heavily along a few highway corridors. The busiest corridor in Canada is the Highway 401–Autoroute 20 corridor running from Quebec City to Windsor. Traffic levels routinely average over 30,000 vehicles per day and rise significantly in and around Toronto and Montreal. Traffic through some sections of

Highway 40 in the Montreal core exceeds 150,000 vehicles per day, while traffic on some sections of Highway 401 passing through the Toronto area is more than twice as busy, exceeding 400,000 vehicles per day in some places.

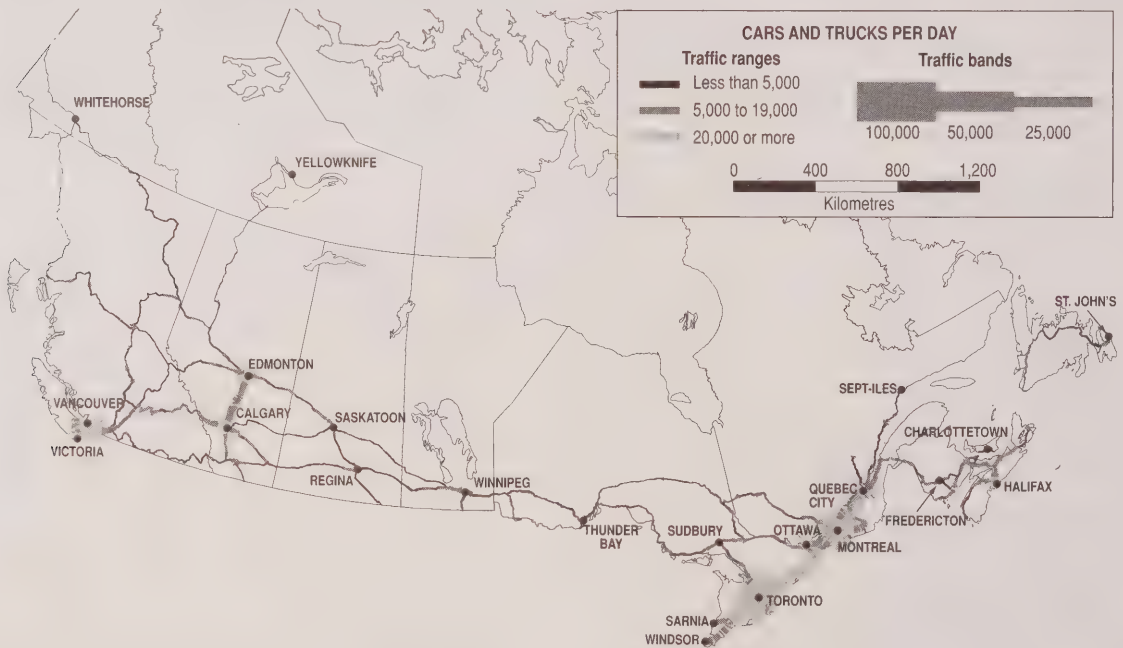
The busiest corridor outside central Canada is a portion of the Trans-Canada Highway in the lower mainland of British Columbia running from Chilliwack to Vancouver. Traffic exceeds 50,000 vehicles per day over many sections of this road and exceeds 120,000 per day in the Greater Vancouver Area.

The next busiest corridor is Highway 2 running between Calgary and Edmonton. Traffic levels average almost 15,000 vehicles per day over this 300-kilometre stretch of highway. The most heavily travelled corridor in Atlantic Canada is Highway 102 between Truro and Halifax. Average daily traffic volumes exceed 15,000 vehicles over most sections of this highway.

## TRAFFIC BETWEEN CANADA AND THE UNITED STATES

Since the mid-1980s, vehicle traffic between Canada and the US has been characterized by two distinct trends in car and truck movements. As Figure 10-5 shows, car traffic

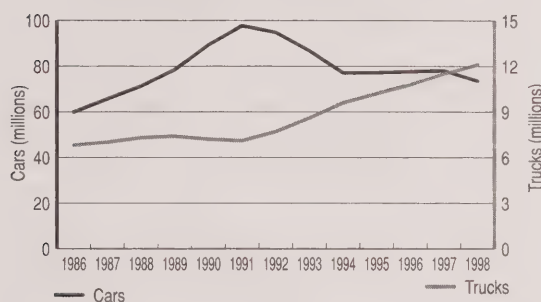
FIGURE 10-4: NATIONAL HIGHWAY SYSTEM DAILY VEHICLE LEVELS, 1996



Source: Transport Canada, traffic information supplied by provincial/territorial highways departments

grew strongly during the late 1980s, peaking at 100 million two-way movements in 1991, but has since declined, levelling off during the mid-1990s. Many of these fluctuations can be attributed to variations in the value of the Canadian dollar relative to the American dollar. During the late 1980s, for example, substantial appreciation in the Canadian dollar touched off unprecedented crossborder shopping activity by Canadians, increasing the number of trips across the border by over 60 per cent between 1986 and 1991.

FIGURE 10-5: ANNUAL TWO-WAY VEHICLE TRAFFIC BETWEEN CANADA AND THE US, 1986 – 1998



Source: Statistics Canada, International Travel section

With the onset of a serious recession during the early 1990s, compounded by the depreciation of the Canadian

dollar, car traffic fell below 80 million movements a year and stabilized at approximately 77 million crossings during the mid-1990s. In 1998, car movements fell appreciably for the first time since 1994 to 74 million movements, approximately two million trips more than the 1988 level.

In contrast, truck traffic grew markedly during the 1990s. Throughout the 1980s, truck movements were relatively stable at about seven million two-way movements a year. Since the coming into force of the Canada-US Free Trade Agreement in 1991 and the North American Free Trade Agreement in 1994, however, truck volumes have surged, rising at an average annual rate of nearly seven per cent to the current level of about 12 million crossings each year.

Crossborder traffic is heavily concentrated among a small number of sites. As Table 10-6 shows, from 1997 to 1998, almost 90 per cent of total truck movements passed through 20 border-crossing sites. For the same period, these 20 busiest crossings accounted for over 70 per cent of total vehicle movements. Four of the busiest truck crossings were located in Ontario: the Ambassador Bridge in Windsor, the Peace Bridge in Fort Erie, the Blue Water Bridge in Sarnia, and the Queenston Bridge in Niagara Falls. These top four truck crossings alone handled 6.6 million trucks in 1998, or 54 per cent of the total truck traffic. British Columbia and Quebec each had four crossings in the top 20, with their busiest crossings, Pacific Highway and Lacolle, respectively, rounding out the top six crossings. New Brunswick had two crossings in the top 20, while the Prairie Provinces each had one.

TABLE 10-6: ANNUAL VEHICLE TRAFFIC AT MAJOR BORDER CROSSINGS, 1997 – 1998

Crossing	Province	Annual two-way traffic volumes (millions)						Distribution (per cent)			
		Trucks		All vehicles		Rank	Rank	Trucks		All vehicles	
		1997	1998	1997	1998			1997	1998	1997	1998
Ambassador Bridge	Ontario	2.7	3.0	1	10.9	11.7	1	23.5	24.7	12.1	13.6
Peace Bridge	Ontario	1.3	1.4	2	7.7	7.6	3	11.7	11.7	8.6	8.9
Blue Water Bridge	Ontario	1.2	1.3	3	5.1	5.1	5	10.4	10.6	5.7	6.0
Queenston Bridge	Ontario	0.9	0.9	4	4.6	4.4	6	7.4	7.4	5.1	5.2
Pacific Highway	British Columbia	0.8	0.8	5	8.7	7.2	4	6.9	6.5	9.8	8.4
Lacolle	Quebec	0.7	0.8	6	2.7	2.6	9	5.8	6.5	3.0	3.1
Lansdowne	Ontario	0.4	0.4	7	1.5	1.6	15	3.5	3.6	1.7	1.9
Emerson	Manitoba	0.3	0.3	8	0.7	0.8	21	2.5	2.7	0.8	0.9
Philipsburg	Quebec	0.2	0.3	9	1.0	1.0	18	2.1	2.1	1.2	1.2
Windsor Tunnel	Ontario	0.3	0.2	10	9.0	9.4	2	2.2	2.0	10.0	11.0
Rock Island	Quebec	0.2	0.2	11	1.5	1.3	17	1.8	1.8	1.6	1.6
Coutts	Alberta	0.2	0.2	12	0.6	0.6	27	1.7	1.7	0.7	0.7
Sault Ste. Marie	Ontario	0.1	0.1	13	3.0	2.7	8	1.1	1.2	3.3	3.1
North Portal	Saskatchewan	0.1	0.1	14	0.3	0.3	35	1.2	1.2	0.4	0.4
Woodstock	New Brunswick	0.1	0.1	15	0.8	0.7	23	1.1	1.1	0.9	0.8
Armstrong	Quebec	0.1	0.1	16	0.3	0.3	34	1.2	1.0	0.4	0.4
Huntingdon	British Columbia	0.1	0.1	17	2.2	1.8	12	1.1	1.0	2.5	2.1
Aldergrove	British Columbia	0.1	0.1	18	1.7	1.4	16	0.8	0.9	1.9	1.6
Milltown	New Brunswick	0.1	0.1	19	0.9	0.8	20	0.9	0.7	1.0	0.9
Kingsgate	British Columbia	0.1	0.1	20	0.3	0.2	37	0.7	0.7	0.3	0.3
Top-20 (ranked by trucks)		10.1	10.8		63.5	61.7		87.9	88.9	70.9	71.9
Total		11.5	12.1		89.6	85.7					

Source: Statistics Canada, International Travel section

## MARINE TRANSPORTATION INFRASTRUCTURE

### PORTS

Canada's major ports play a significant role in Canada's transportation system. Vancouver is Canada's largest port and the main terminal for goods being shipped to the Asia-Pacific region. The Port of Prince Rupert, located just below the Alaskan Panhandle, has the shortest sailing distance from North America to Pacific Rim countries. In the east, shipments are divided among several ports, including Montreal, Halifax, Port Cartier, Sept-Îles, Saint John and Quebec City.

Despite the cold climate in winter, many of Canada's deep-water ports are open year-round. The infrastructure that supports the port system includes marine terminals with modern container facilities that connect with container trains, which move goods throughout North America. Port authorities operate some of these marine terminals, but often they are owned and operated by independent companies that rent space from the port.

### THE PORT SYSTEM

Over the past number of years, the federal government has been working to reengineer Canada's marine transportation system. As part of these efforts, the National Marine Policy, announced in December 1995, set out the government's intention to bring more commercial discipline to the marine sector to improve efficiency and give local regions more control over their ports. The commercialization of the St. Lawrence Seaway is an important part of this policy.

The *Canada Marine Act* (CMA), which received Royal Assent on June 11, 1998, enabled Transport Canada to implement the National Marine Policy. The policy called for three categories of ports: independently managed Canada Port Authorities (CPAs), regional and local ports, and remote ports.

Canada Port Authorities are self-sufficient ports that have been deemed essential to domestic and international trade. As a group, they make up the National Ports System and include ports that were formerly Ports Canada local port corporations, major Canada Ports Corporation divisional ports, and most harbour commissions.

To date, 17 of the 18 ports designated to become Canada Port Authorities have received their CPA status and have established their boards of directors:

- Halifax, Montreal, and Vancouver on March 1, 1999
- Fraser River, Prince Rupert, Quebec City, Saguenay, Saint John, Sept-Îles, St. John's and Trois-Rivières on May 1, 1999
- Toronto on June 8, 1999
- Nanaimo, North Fraser, Port Alberni, Thunder Bay, and Windsor on July 1, 1999.

The Port of Hamilton, the only designated port left to be established as a Canada Port Authority, will receive CPA status when it completes the letters patent process. In addition to the original 18 ports listed in the *Canada Marine Act*, Transport Canada has received applications for CPA status from two other ports — Belledune and Oshawa. Their letters patent are under development.

The Canada Ports Corporation is targeted for dissolution in 2000. The corporation has been kept open with minimal staff during the implementation phase of the National Ports System to ensure that all ports have been either transferred to Canada Port Authority status or divested to local interests.

On March 1, 1999, Part II of the *Canada Marine Act* came into force for existing public ports, which consolidated regional and local ports with other public ports. This category includes Transport Canada facilities that are not deemed to be remote facilities, as well as any Canada Ports Corporation facilities or harbour commissions not incorporated as Canada Port Authorities.

Regional and local ports are being offered to other federal departments or to provincial governments, municipal authorities, community organizations or private interest groups. As Table 10-7 shows, Transport Canada has divested a total of 357 public ports since 1996. These ports were either transferred, deproclaimed or demolished, or had Transport Canada's interests terminated. The largest transfer of ports took place in 1996, with the devolution of 277 ports. In 1999, 35 facilities were divested, while 1998 and 1997 saw the devolution of 11 and 34 ports, respectively.

Table 10-7 summarizes the changes that have taken place in responsibility for ports' operations since 1996.

TABLE 10-7: PORTS NO LONGER UNDER THE ADMINISTRATION OF TRANSPORT CANADA, 1996 – 1999

Year	Transferred	Deproclaimed	Demolished/		Total
			Closed	TC Interests Terminated	
1996	78	199	0	0	277
1997	32	0	2	0	34
1998	10	0	0	1	11
1999	11	12	2	10	35

Note: Numbers include remote ports and sites where harbour beds have not yet been divested.

Source: Transport Canada



As of December 31, 1999, a total of 192 regional, local and remote ports remain under federal control. Table 10-8 summarizes the regional distribution of the ports administered by Transport Canada from 1995 to 1999. The federal government will continue to maintain remote ports that serve the basic transportation needs of isolated communities unless local interests express a willingness to assume ownership of such port facilities. While 26 remote ports were divested in 1996 and 1997, there have been no further divestitures of remote ports since then. Transport Canada continues to administer 34 remote ports in Quebec, Ontario, Manitoba and British Columbia. A growing number of "other" ports are being operated by provincial or municipal governments and private interests as Transport Canada divests itself of its facilities.

**TABLE 10-8: STATUS OF TRANSPORT CANADA'S PORTS BY PROVINCE AND YEAR, 1996 – 1999**

(Transport Canada Administered Public Port Sites)<sup>1</sup>

Province	1995 <sup>2</sup>	1996	1997	1998	1999
Newfoundland	58	40	20	19	18
New Brunswick	45	9	7	6	3
Nova Scotia	128	35	35	31	18
Prince Edward Island	31	4	4	4	4
Quebec	73	48	46	46	45
Ontario	54	37	30	25	20
Manitoba	2	2	2	2	2
Saskatchewan	4	4	4	4	4
Alberta	3	1	1	1	1
British Columbia	105	92	89	89	77
Northwest Territories	46	0	0	0	0
Total	549	272	238	227	192

1 Numbers include remote ports.

2 Last year prior to the National Marine Policy.

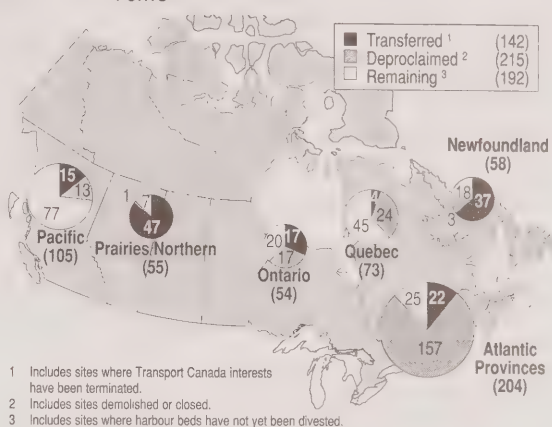
Source: Transport Canada

At the end of 1999, there were 108 other ports, including 57 private, 33 provincial and 18 municipal ports. These ports vary both in terms of size and activity. They include sites such as Port Cartier, Quebec, used to ship large volumes of cargo and Quyon, Quebec, which is used for an interprovincial ferry service on the Ottawa River. This category of ports has been growing as facilities have been transferred under the National Marine Policy.

Figure 10-6 shows the divestiture status of regional, local and remote ports, highlighting those that have been transferred or deproclaimed, as well as the number of ports yet to be divested.

Audited financial statements for 1999 are not yet available. As a result, the following financial results for 1998 are provided for Ports Canada ports, Harbour

**FIGURE 10-6: DIVESTITURE STATUS OF REGIONAL, LOCAL AND REMOTE PORTS**



Source: Transport Canada

Commissions and Transport Canada facilities not divested prior to December 31, 1998.

### Ports Canada<sup>3</sup>

In 1998, Ports Canada posted total revenues of \$231 million, with a net income of \$20 million and operating cash flows of \$62 million. The seven major ports handled 83 per cent of the volume and generated roughly 77 per cent of the total revenues of Ports Canada ports

Table 10-9 shows 1998 revenues, expenses and some key ratios for Ports Canada ports and for divisional ports as a whole.

The overall operating ratio for Ports Canada ports was 75 per cent in 1998. Taken together, the major ports had a ratio of 81 per cent, with individual ratios ranging from 70 to 95 per cent. Except for Vancouver and Halifax, ratios for all major ports were above 80 per cent. For divisional ports, the operating ratio as a whole was 56 per cent.

The return on assets for Ports Canada ports was two per cent in 1998. Montreal had the highest return on assets, at eight per cent, with its investment income almost as large as its operating income. Taken together, the major ports' return was one per cent, compared with ten per cent for divisional ports.

While revenues at major ports declined three per cent in 1998 from that reported in 1997, operating expenses have also declined by six per cent. It is noted, however, that approximately one-half of these reductions are as a result of the new financial statement format adopted by the

3 In subsequent annual reports, the information presented here will be reported by Canada Port Authorities (CPAs). Given that the most recent year for which the information is reported in this report is 1998, and that most CPAs were created in 1999, a breakdown by CPA will be presented in Transport Canada's 2000 annual report.



TABLE 10-9: FINANCIAL PROFILE, PORTS CANADA PORTS, 1998

(Millions of dollars)

Item	Vancouver	Montreal	Halifax	Quebec City	Saint John	St. John's	Prince Rupert	Divisional Ports <sup>1</sup>	Total All Ports
Operating Revenues	73.4	57.1	14.1	13.1	11.2	3.0	7.2	52.2	231.4
Operating Expenses	51.1	50.4	11.0	12.3	9.9	2.7	6.8	29.4	173.7
Operating Income	22.4	6.7	3.1	0.8	1.3	0.3	0.4	22.8	57.7
Ratio: Expenses/Revenues (per cent)	70	88	78	94	89	91	95	56	75
Net Income	0.4	13.0	3.0	(10.6)	1.9	0.6	0.8	11.0	20.1
Net Fixed Assets	415.0	165.3	78.1	37.1	57.6	11.6	94.9	110.6	970.3
Ratio: Net income/Net fixed assets (per cent)	0	8	4	(29)	3	5	1	10	2
Funds from Operations	17.0	24.3	6.2	0.7	1.6	1.3	2.8	8.2	62.2
Investment Income	4.3	6.3	0.1	1.5	0.7	0.3	0.4	6.0	19.7
Total Assets	444.2	269.1	87.6	81.5	71.2	18.9	104.9	284.1	1,361.4
Net Capital Expenditures	10.3	18.1	18.2	1.0	2.3	0.8	4.5	7.0	62.2
Retained Earnings	213.2	96.3	22.5	(9.4)	5.5	7.7	19.2	(125.7)	229.2
Contributed Capital	150.3	153.9	50.9	66.3	61.7	10.1	84.6	56.8	634.5

Note: Due to rounding, columns may not add to totals shown.

1 Ridley Terminals is included in Divisional Ports, yet is operated independently of Divisional Ports.

Source: Annual Reports

Prince Rupert Port Corporation in 1998 whereby only direct revenues are reflected in revenues earned by the Corporation. In prior years, revenues realized by the terminal operator were included in operating revenues. Despite this revision, revenues earned at major ports have increased five per cent over the five-year period, while operating costs have declined by four per cent over the same period.

At the divisional ports, operating revenues and operating expenses have decreased by 12 per cent and eight per cent respectively from 1997, or 14 per cent and 13 per cent respectively over the five-year period. Overall, the operating ratio for all ports remained relatively equal to that reported in 1997, with a four per cent improvement over the five-year period.

Total 1998 net income of all ports, major and divisional, has more than doubled, moving from \$9.2 million in 1994 to \$20.1 million in 1998. These financial changes occurred as traffic volumes increased by one per cent between 1994 and 1998. During this period, revenue per tonne remained relatively stable at \$1.29. Expenses per tonne, however, dropped from \$1.04 in 1994 to \$0.97 in 1998, a decrease of almost seven per cent.

Table 10-10 shows revenues, expenses and incomes for all Ports Canada ports from 1994 to 1998.

## Harbour Commissions

With the exception of Toronto, all harbour commissions reported close to positive net incomes in 1998. The Fraser and Hamilton harbour commissions posted the largest net incomes at \$1.3 and \$2.4 million, respectively. Total

TABLE 10-10: FINANCIAL RESULTS OF MAJOR AND DIVISIONAL PORTS, 1994 – 1998

(Millions of dollars)

		Revenues	Expenses	Operating Income	Ratio	Net Income	Net Income/ Net Fixed Assets
Major Ports	1994	170.7	149.8	20.9	0.88	3.8	0.00
	1995	169.8	148.3	21.4	0.87	24.3	0.03
	1996	175.9	143.3	32.9	0.81	18.3	0.02
	1997	184.9	153.4	31.5	0.83	25.7	0.03
	1998	179.2	144.3	34.9	0.81	9.1	0.01
Divisional Ports	1994	60.8	33.8	27.0	0.56	5.3	0.05
	1995	60.1	33.9	26.2	0.56	11.3	0.11
	1996	59.0	33.3	25.8	0.56	13.2	0.12
	1997	59.6	32.0	27.6	0.54	8.8	0.08
	1998	52.2	29.4	22.8	0.56	11.0	0.10
Total All Ports	1994	231.5	183.7	47.9	0.79	9.2	0.01
	1995	229.9	182.3	47.6	0.79	35.6	0.04
	1996	235.0	176.6	58.7	0.75	31.5	0.03
	1997	244.5	185.4	59.1	0.76	34.5	0.04
	1998	231.4	173.7	57.7	0.75	20.1	0.02

Notes: Due to rounding, columns may not add to totals shown.

With the exception of ratios, the measurement unit is millions of dollars.

Source: Annual Reports

revenues were \$55.8 million and expenses were \$53.3 million, creating an operating ratio of about 96 per cent. Net income of \$8 million provided a return on total assets of 2.1 per cent.

The financial data for harbour commissions between 1993 and 1998<sup>4</sup> shows that both revenues and expenses increased during the period. Expenses grew by five per cent, revenues by two per cent. As a result, operating income declined from \$4 million to \$2.5 million during the period, although the operating ratio deteriorated from 93 to 96 per cent.

4 As of 1995, all harbour commissions operated on a calendar-year basis (January to December). Prior to this, the Toronto Harbour Commission operated on a fiscal-year basis (April to March).

TABLE 10-11: HARBOUR COMMISSIONS FINANCIAL RESULTS, 1998

(Millions of dollars)

Item	Port Alberni	Fraser	Hamilton	Nanaimo	North Fraser	Oshawa	Thunder Bay	Toronto	Windsor	Sum of all Harbour Commissions
Operating Revenues	3.0	11.5	12.6	5.5	4.5	0.7	2.8	13.6	1.6	55.8
Operating Expenses	3.2	10.2	10.2	5.8	4.3	0.8	2.3	15.7	0.9	53.3
Operating Income	(0.2)	1.3	2.4	(0.2)	0.1	(0.1)	0.5	(2.1)	0.7	2.5
<b>Ratio: Expenses/Revenues (per cent)</b>	<b>106.6</b>	<b>88.7</b>	<b>80.7</b>	<b>103.9</b>	<b>96.9</b>	<b>114.4</b>	<b>83.0</b>	<b>115.3</b>	<b>55.5</b>	<b>95.6</b>
Net Income	0.1	2.3	3.1	0.2	0.3	0.3	1.1	(0.2)	0.8	8.0
Total Assets	16.2	123.9	78.6	34.3	11.9	6.8	27.7	67.3	8.6	375.3
<b>Ratio: Net income/Total assets (per cent)</b>	<b>0.8</b>	<b>1.9</b>	<b>3.9</b>	<b>0.6</b>	<b>2.2</b>	<b>4.4</b>	<b>3.8</b>	<b>0.3</b>	<b>9.8</b>	<b>2.1</b>

Source: Transport Canada

Traffic volume was 44.1 million tonnes in 1998. Tonnage handled at harbour commission ports rose by 15 per cent over the five years between 1993 and 1998 (with year-to-year fluctuations). Comparing 1998 with 1993, revenues and expenses expressed on a per-tonne basis were about 11 per cent and eight per cent lower, respectively. Net income also fell during this period.

Table 10-11 gives financial results for all harbour commissions for 1998.

### Transport Canada Ports

Approximately 10 per cent of the ports remaining under Transport Canada's control generated 70 per cent of the total revenues in fiscal 1998/99. Gross revenues for the same year were \$18.6 million, while expenses were \$24.3 million. This left an operating revenue deficit of \$5.7 million and an operating ratio of 131 per cent. Capital expenditures for the year were \$4.1 million. An additional \$1.3 million came from grants and contributions related to transfers associated with ports divestitures.

Revenues increased by 44 per cent during this time, but will decline as more ports are divested. This revenue rise is due to traffic growth and fee increases since 1994/95. Expenses fluctuated over this period but, like revenues, are expected to decline as more and more ports are divested.

Between 1993 and 1998, revenues per tonne have increased from \$0.15 to \$0.23, or by 53 per cent, while expenses per tonne<sup>5</sup> have remained relatively stable at approximately \$0.31 per tonne.

Table 10-12 summarizes the financial details of ports and harbours remaining under Transport Canada's control from 1994/95 to 1998/99.

### Port Traffic

The following preliminary data shows the traffic at some Canada Port Authorities in 1999:

TABLE 10-12: FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1994/95 – 1998/99

	(Millions of dollars)				
	1994 / 1995	1995 / 1996	1996 / 1997	1997 / 1998	1998 / 1999
Revenue <sup>1</sup>	12.9	17.1	20.3	20.7	18.6
Expenses <sup>2</sup>	28.7	33.6	28.5	27.4	24.3
Operating Income	(15.8)	(16.5)	(8.2)	(6.7)	(5.7)
<b>Capital Expenditures</b>	<b>23.1</b>	<b>11.3</b>	<b>11.9</b>	<b>1.9</b>	<b>4.1</b>
Grants and Contributions <sup>3</sup>		10.0	13.1	1.5	1.3
<b>Ratio: Expenses/Revenues (per cent)</b>	<b>222</b>	<b>196</b>	<b>140</b>	<b>132</b>	<b>131</b>

1 This represents gross revenues.

2 This represents operating and maintenance expenses including commissions.

3 This item represents transfers related to the devolution of port facilities.

Source: Annual Reports and Transport Canada

- Halifax: almost 14 million tonnes; 107,837 cruise ship passengers
- Montreal: 20.6 million tonnes; 18,300 cruise ship passengers
- Nanaimo: 2.1 million tonnes
- Port Alberni: 1 million tonnes
- Prince Rupert: 8.9 million tonnes
- Quebec City: 16 million tonnes
- Saint John: 20 million tonnes
- Sept-Îles: 20.9 million tonnes
- Thunder Bay: almost 9 million tonnes
- Trois-Rivières: 2.2 million tonnes
- Vancouver: 71.2 million tonnes; 947,659 cruise ship passengers
- Windsor: 5.7 million tonnes

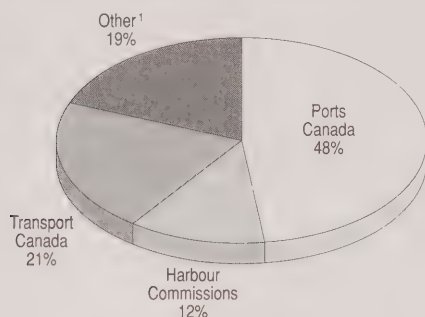
### Port Traffic Statistics

Based on Statistics Canada data (available only up to 1998), Canada's ports handled a total of 376.1 million tonnes of cargo in 1998, almost the same quantity as in 1997.

5 Tonnage statistics include cargoes moved across private facilities within Transport Canada public harbours.

Figure 10-7 shows traffic shares by port groups for 1998.

FIGURE 10-7: TRAFFIC SHARES BY PORT GROUPS, 1998



<sup>1</sup> Includes DFO, provincial and municipal governments and private facilities.

Source: Transport Canada from data supplied by Statistics Canada

In 1998, Ports Canada ports handled the largest amount of traffic, with a 48 per cent share of the total. Harbour commissions' ports transported 12 per cent of total, while another 21 per cent of cargo was moved through Transport Canada facilities. The remaining 19 per cent was handled by other facilities, including those managed privately and those managed by or on behalf of the Department of Fisheries and Oceans and provincial and municipal governments.

From 1997 to 1998, the total amount of cargo handled at Ports Canada ports and Transport Canada facilities decreased by four per cent, while cargo handled at harbour commissions decreased by three per cent. Overall, the total tonnage of cargo moved through Canada's ports remained constant year over year, with increased traffic in "other" ports offset by equivalent tonnage decreases at Transport Canada facilities, Ports Canada ports and harbour commissions.

At those declared public ports where Transport Canada has no facilities and cargo is transported across private wharves, cargo shipped totalled 25.8 million tonnes, or 33 per cent of the total traffic handled by Transport Canada ports. In total, 73.6 million tonnes crossed "other" ports, of which Port Cartier handled the most at 19.3 million tonnes.

Table 10-13 gives details of tonnage handled by Canada's port system.

### Small Craft Harbours

The Department of Fisheries and Oceans (DFO) administers harbours used for commercial and recreational boating under the *Fishing and Recreational Harbours Act*. DFO is divesting all recreational harbours under its responsibility, as well as derelict and low-activity fishing

TABLE 10-13: TOTAL TONNAGE<sup>1</sup> HANDLED IN CANADA'S PORT SYSTEM, 1997 - 1998

Port System	(Thousands of tonnes)		Per cent Change
	1997 Total	1998 Total	
Ports Canada	187,279	179,357	(4)
Harbour Commissions	45,355	44,071	(3)
Transport Canada	82,237	79,024	(4)
Other	61,536	73,611	20
<b>Total</b>	<b>376,407</b>	<b>376,063</b>	<b>0</b>

<sup>1</sup> Tonnage statistics include cargos shipped across private facilities.

Source: Transport Canada from data supplied by Statistics Canada

harbours. All facilities essential to the fishing industry will remain the property of the federal government to ensure that these sites preserve their commercial status and that they continue to provide services to communities. Over the last decade, DFO has encouraged the creation of local non-profit organizations known as Harbour Authorities to take over the management of commercial fishing harbour facilities, as well as to assure the maintenance of the sites and to provide services to users. It should be noted that DFO will retain only those fishing harbours managed by a Harbour Authority.

### Fishing Harbours

As of the end of January 2000, a total of 1,070 fishing harbours were still in the Department of Fisheries and Oceans' inventory, a decrease of 17.1 per cent from 1994. Harbour Authorities currently manage 51 per cent of these harbours. By 2003, however, approximately 750 are expected to be managed by Harbour Authorities, while another 300 derelict and low-activity harbours will be divested. It should be noted that 13 per cent of the remaining small craft harbours are classified as derelict (sites in a state of disrepair with no activity, which are slated for demolition).

Table 10-14 reports the fishing harbours remaining under DFO's responsibility as of January 2000, by region and type of management.

TABLE 10-14: FISHING HARBOURS BY HARBOUR TYPE AND REGION, JANUARY 2000

Region	Harbour Authorities	Small Craft Harbours	Total by Region
British Columbia and Yukon <sup>1</sup>	52	107	159
Prairies and Territories <sup>1</sup>	15	37	52
Ontario	5	9	14
Quebec	51	36	87
Maritimes	260	125	385
Newfoundland and Labrador	164	209	373
<b>Total</b>	<b>547</b>	<b>523</b>	<b>1,070</b>

<sup>1</sup> There are no Harbour Authorities in Saskatchewan, Northwest Territories, Nunavut and the Yukon.

Source: Small Craft Harbours, Department of Fisheries and Oceans



## Recreational Harbours

The Department of Fisheries and Oceans is also gradually divesting all recreational harbours. Under Program Review, the federal government committed to withdraw from programs whose function was seen to be more closely aligned with provincial, community or private-sector interests in tourism and local economic development than with federal priorities. The recreational facilities are transferred mostly to provincial and municipal entities for a nominal cost and with the assurance that the recipient will continue to operate the facility for its current purpose and, essentially, at its current level of operations for at least five years.

Prior to transfer, the Department of Fisheries and Oceans considers making essential repairs to transfer the installations in a safe and reasonable condition. The divestiture program is targetted to end in 2001. No additional funding was allocated for the divestiture of recreational harbours, and funds used are, in fact, diverted from the Fishing Harbour Program.

Divesting all recreational harbours will free up funds for the repair of core fishing harbours. Projected small craft harbour expenditures for fiscal year 1999/00 are about \$59.8 million. Maintenance (minor and major capital) accounts for 82 per cent of expenses, while operations account for seven per cent. Salaries and contributions make up the remainder with nine and two per cent, respectively. Revenues earned from leases, licences, and berthage and wharfage dues are projected to drop by 30 per cent in 1999/00 as a consequence of the divestiture program. The largest decrease is expected to be observed in Ontario, with revenues declining by close to \$450,000, or 31.4 per cent.

Tables 10-15, 10-16 and 10-17 summarize, by region, the status of the recreational harbour divestiture program, the recipients of harbours divested and the type of management of the remaining facilities in the Department of Fisheries and Oceans' inventory.

**TABLE 10-15: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96 – 1999/2000**

Province	1995/96	1996/97	1997/98	1998/99	Plans for 1999/2000	Remaining to be divested	Total by Region
British Columbia and Yukon	8	1	25	13	13	5	65
Central and Arctic	8	50	89	63	66	171	447
Quebec	53	24	93	15	20	47	252
Maritimes	0	4	8	26	27	15	80
Newfoundland and Labrador	0	0	0	1	0	1	2
<b>Total</b>	<b>69</b>	<b>79</b>	<b>215</b>	<b>118</b>	<b>126</b>	<b>239</b>	<b>846</b>

Source: Small Craft Harbours, Department of Fisheries and Oceans

**TABLE 10-16: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, 1995/96 – 1999/2000**

	Province	Municipality	Private Sector	Other <sup>1</sup>	Total by Region <sup>2</sup>
British Columbia and Yukon	51	0	0	0	51
Prairies and Territories	3	5	0	0	8
Ontario	16	162	18	28	224
Quebec	2	167	3	25	197
Maritimes	5	15	3	21	44
Newfoundland and Labrador	0	1	0	0	1
<b>Total</b>	<b>77</b>	<b>350</b>	<b>24</b>	<b>74</b>	<b>525</b>

1 "Other" in the context of the divestiture of recreational harbours refers to sites that have been transferred to local non-profit organizations, First Nations or other federal departments, as appropriate.

2 Number of harbours transferred as of January 28, 2000.

Source: Small Craft Harbours, Department of Fisheries and Oceans

**TABLE 10-17: MANAGEMENT TYPE AT RECREATIONAL HARBOURS IN THE DEPARTMENT OF FISHERIES AND OCEANS' INVENTORY BY REGION**

	Managed under lease <sup>1</sup>	Small Craft Harbours	Total by Region <sup>2</sup>
British Columbia & Yukon <sup>3</sup>	0	14	14
Prairies & Territories <sup>3</sup>	10	25	35
Ontario	133	47	180
Quebec	5	50	55
Maritimes	1	35	36
Newfoundland & Labrador	0	1	1
<b>Total</b>	<b>149</b>	<b>172</b>	<b>321</b>

1 By municipalities, local non-profit organizations, etc.

2 Remaining harbours in DFO inventory as of January 28, 2000.

3 There are no Harbour Authorities in Saskatchewan, Northwest Territories, Nunavut and the Yukon.

Source: Small Craft Harbours, Department of Fisheries and Oceans

## ST. LAWRENCE SEAWAY

The St. Lawrence Seaway connecting the Port of Montreal and Lake Erie is a shared responsibility between Canada and the United States. Canada is responsible for the eight locks of the Welland Canal and five of the seven locks between Montreal and Lake Ontario, while the US Saint Lawrence Seaway Development Corporation (SLSDC) operates the remaining two locks.

The Seaway can accommodate vessels 225.5 metres in length, 23.8 metres in beam and eight metres in draft. As a ship travels west through the Seaway from the Port of Montreal, the locks eventually raise the ship the height of a 60-storey building above the water level at Montreal. Figure 10-8 shows the St. Lawrence Seaway system.

## THE ST. LAWRENCE SEAWAY UNDER NEW MANAGEMENT

In 1999, the Canadian Seaway saw its first full year of management by the St. Lawrence Seaway Management Corporation (SLSMC). Management was handed to the



FIGURE 10-8: GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM



Source: St. Lawrence Seaway Authority Annual Report, 1997-1998

Corporation, a not-for-profit, private-sector organization controlled by Seaway users, on October 1, 1998.

In keeping with the introduction of commercial discipline to the Seaway, the Ottawa head office of the St. Lawrence Seaway Management Corporation was closed and services were merged with the Cornwall office. While the lands and fixed assets of the Seaway system remain the property of the Government of Canada, the corporation is responsible for its management, operation and maintenance (see text box). As part of the transfer agreement, the corporation assumed risks relating to cost and the federal government assumed risks relating to revenue.

One of the cornerstones of the Seaway agreement is a five-year business planning cycle. The first plan, now in effect, sets specific targets for operating and asset renewal costs, as well as anticipated revenues for the next five years.

## TRAFFIC IN 1998

The total value of the 51.1 million tonnes of combined cargo transported along the Seaway for the 1998 season was estimated at \$7.5 billion, a 4.4 per cent increase in volume over the 49.0 million tonnes of traffic handled in 1997.

The main commodities moved along the Seaway are grain, iron ore, coal, other bulk and steel. They generally account for over 70 per cent of total cargoes. The success of the 1998 navigation season can be attributed to a substantial increase (more than 37 per cent) in shipments of general cargo, which includes steel slabs and other steel products, mostly from Europe. US grain movements also increased because of their link to steel imports (as a backhaul cargo). Movements of iron ore, coal and other bulk cargo, however, remained steady during 1998.

6 Combined for Montreal-Lake Ontario and Welland Canal sections.

As shown in Table 10-18, total traffic on the Montreal–Lake Ontario (MLO) section of the Seaway increased by about 6.4 per cent to 39.2 million tonnes, while total traffic on the Welland Canal section decreased by 0.6 per cent to 40.7 million tonnes.

There were 4,366 vessel transits in 1998, including 64 vessels that came into the system for the first time. The number of ocean vessel transits through the system grew by 28 per cent over 1997, from 1,122 to 1,438, corresponding to the high level of steel imports through the Seaway system in 1998.

**TABLE 10-18: ST. LAWRENCE SEAWAY CARGO MOVEMENTS,<sup>1</sup>  
1990 – 1998**

	(Thousands of tonnes)	
	<i>Montreal–Lake Ontario Section</i>	<i>Welland Canal Section</i>
1990	36,656	39,398
1991	34,910	36,919
1992	31,360	33,174
1993	31,970	31,815
1994	38,422	39,703
1995	38,684	39,376
1996	38,075	41,145
1997	36,901	40,902
1998	39,246	40,657

<sup>1</sup> Combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

## PRELIMINARY DATA FOR 1999<sup>7</sup>

Cargo volume for the combined Welland Canal and Montreal–Lake Ontario sections of the system was about 47.6 million tonnes, or seven per cent lower than in 1998, largely because of reduced demand for steel imports.

In 1999, Canadian grain shipments increased by 7.6 per cent on the Montreal–Lake Ontario section and 2.7 per cent on the Welland Canal over 1998, to 6.0 and 5.8 million tonnes, respectively. American grain traffic also increased, by 5.5 per cent to 5.7 million tonnes on the Montreal–Lake Ontario section and by 3.8 per cent to 5.7 million tonnes on the Welland Canal section. Total grain traffic increased by 5.7 per cent on the Montreal–Lake Ontario section and by 2.5 per cent on the Welland Canal in 1999.

Iron ore shipments on the Montreal–Lake Ontario section were down only slightly to 10.0 million tonnes, while shipments on the Welland Canal section decreased 15.4 per cent to 5.3 million tonnes. This reflects a greater reliance by Canadian steel mills on iron ore originating from Quebec–Labrador.

### THE MANAGEMENT, OPERATION AND MAINTENANCE AGREEMENT BETWEEN THE GOVERNMENT OF CANADA AND THE ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION

The St. Lawrence Seaway Management Corporation was mandated to manage, operate and maintain the Seaway in accordance with a Management, Operation and Maintenance Agreement that requires the corporation to submit five-year business plans throughout the term of the agreement to the Minister of Transport. The business plan includes anticipated revenues and operating costs and an "Asset Renewal Plan." The corporation is authorized to charge tolls and other revenues to finance the operation and maintenance of the Seaway, and to recover from the Government of Canada such additional funds to eliminate operating deficits when required, in accordance with the terms of the agreement.

The agreement also provides for the formation of a "Capital Committee" made up of two representatives of the corporation and two representatives of the Crown. They will review the annual plan for the capital, maintenance and asset replacement requirements of the assets under the administration of the corporation and determine, if it is appropriate, whether any changes are warranted.

The corporation must meet cost targets for operations and asset renewal budgets, which have been negotiated with the government, as well as implement a two per cent annual toll increase for each of the first five years. If the corporation fails to meet cost targets, penalties in the form of higher toll increases may be imposed. If the corporation achieves better results than those required in the contract, it may increase tolls less than the base amount, or introduce an incentive toll program after year three.

Coal traffic remained close to its 1998 level. Traffic on the Welland Canal decreased by 1.3 per cent to 4.2 million tonnes. On the Montreal–Lake Ontario section, coal traffic recovered somewhat to 266,000 tonnes. In 1998, coal movements to New Brunswick facilities were lost to a South American source, resulting in a 343,000 tonne, or 64.2 per cent, decrease to 191,000 tonnes.

In 1999, general cargo traffic, largely iron and steel products, on the Montreal–Lake Ontario section registered a substantial decrease of 2.5 million tonnes, or 36.3 per cent, for a total of 4.3 million tonnes. General cargo traffic on the Welland Canal section registered a decrease of two million tonnes, or 37.7 per cent, for a total of 3.3 million tonnes. After a record year in 1998, the drop can be explained by a sharp decrease in imports of iron and steel products in 1999 as the US and Canada acted to curb alleged dumping of steel, as well as by large surpluses built up by US and Canadian importers.

Table 10-19 shows commodity movements on the St. Lawrence Seaway from 1990 to 1998.

<sup>7</sup> Year-to-date data to the end of November 1999

**TABLE 10-19: ST. LAWRENCE SEAWAY TRAFFIC<sup>1</sup> BY COMMODITY, 1990 – 1998**

(Thousands of tonnes)						
Year	Grain	Iron Ore	Iron and Steel	Coal and Coke	Other	Total
1990	12,718	12,581	4,128	7,365	11,615	48,407
1991	15,766	10,289	3,855	5,803	9,474	45,187
1992	12,415	10,056	3,607	6,021	10,237	42,336
1993	10,592	10,906	4,432	4,408	10,647	40,985
1994	12,464	12,625	7,019	4,528	12,255	48,891
1995	14,485	11,872	4,844	5,005	11,917	48,124
1996	12,158	13,362	6,056	5,460	12,903	49,939
1997	13,339	12,051	5,418	5,545	12,600	48,953
1998	12,483	12,117	7,182	5,510	13,839	51,131

Note:

1 Combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

## RATES AND TARIFFS

In keeping with the terms of an agreement negotiated with Seaway users, a two per cent toll increase for the Canadian section of the Seaway was implemented on June 1, 1998. This was the first increase since 1993. A further two per cent toll increase was implemented in 1999.

As part of this commercialization agreement, a two per cent annual toll increase with no discounts/reductions was negotiated for 1998, 1999 and 2000. However, the agreement obliges the St. Lawrence Seaway Management Corporation to increase tolls beyond the two per cent level if it cannot achieve the cost targets set out in the business plan. Because the successful 1998 season allowed the corporation to meet and even exceed their targets, the toll increase for 2000 will remain at two per cent. In years four and five of the plan, toll discounts/reductions will be allowed if the corporation continues to exceed the business plan requirements.

## FINANCIAL PROFILE

As a consequence of the transfer of the management of the Seaway to the corporation on October 1, 1998, the financial statements from October 1, 1998, to March 31, 1999, reflect only three months of operating revenues (October to December, as the Seaway closes for the months of January through March) and six months of expenses (October 1, 1998, to March 31, 1999). These expenses include the winter works program comprising the asset renewal and most of the major maintenance costs. Therefore, the financial results for the first six months of the corporation's existence are not representative of a full year's operation of the Seaway and are therefore not presented in this report. Furthermore, the financial results of the corporation will not be comparable to previous years' financial statements, as they exclude the revenues and expenses pertaining to the non-navigational assets,

the income taxes relating to the St. Lawrence Seaway Authority, amortization expenses, as well as other expenses that are treated differently.

Table 10-20 shows the financial performance of the St. Lawrence Seaway from 1988/89 to 1997/98.

**TABLE 10-20: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1988/89 – 1997/98**

(Millions of dollars)				
Year	Operating Revenues	Operating Expenditures	Operating Income	Net Income
1988/89	64.7	72.0	(7.3)	(1.9)
1989/90	64.5	75.5	(11.0)	(5.1)
1990/91	65.6	80.8	(15.2)	(9.9)
1991/92	65.4	76.8	(11.4)	(1.8)
1992/93	65.0	78.7	(13.7)	(11.0)
1993/94	69.6	78.0	(8.4)	(6.1)
1994/95	83.9	74.1	9.9	15.5
1995/96	78.1	80.6	(2.4)	1.9
1996/97	83.4	80.1	3.3	0.2
1997/98	84.6	85.5	(1.0)	(3.7)

Source: St. Lawrence Seaway Authority, Annual Report

## MARINE PILOTAGE

### LEGISLATIVE FRAMEWORK

The *Pilotage Act* of 1972, as amended in 1998 by the *Canada Marine Act*, governs marine pilotage in Canada. Under this Act, four regional pilotage authorities were established — Atlantic (APA), Laurentian (LPA), Great Lakes (GLPA) and Pacific (PPA). Each authority is mandated to provide safe and efficient pilotage services that respond to the particular requirements of its traffic, as well as to the varied geography and climatic conditions of the waterways concerned. Although they are not considered agents of the Crown, all authorities report directly to the Minister of Transport.

### MINISTERIAL REVIEW OF OUTSTANDING PILOTAGE ISSUES

In August 1998, the Minister of Transport asked the Canadian Transportation Agency (CTA) to conduct a forward-looking examination of the marine pilotage system in Canada (see boxed text).

The agency's report and the Minister's response were jointly tabled in Parliament in late November 1999. The four pilotage authorities have been asked to submit an implementation plan for the recommendations by May 2000.



### THE CANADIAN TRANSPORTATION AGENCY'S MARINE PILOTAGE REVIEW

Section 157 of the *Canada Marine Act* (CMA), which came into force on October 1, 1998, contains a provision that amended the *Pilotage Act* of 1972 by adding a requirement for the Minister of Transport to further review the pilotage system. In keeping with this legislation, the Minister asked the Canadian Transportation Agency to conduct a review of the pilotage system in August 1998. The impetus for this review stemmed from the 1995 National Marine Policy, which recognized a need to further analyse some of the outstanding issues within the pilotage regime.

The review covered five distinct subject areas:

- pilot certification process for masters and officers
- training and licensing requirements for pilots
- compulsory pilotage area designations
- dispute resolution mechanisms
- financial self-sufficiency and cost-reduction measures.

The agency's final report, submitted to the Minister on September 1, 1999, contained 21 recommendations, with which Transport Canada concurs in principle.

The following recommendations apply to all pilotage authorities:

- identify, through consultation by each authority, any compulsory areas that justify a reexamination of the designation, based on a risk assessment and the conduct of a review every five years;
- maintain a case-by-case assessment of waivers' requests to compulsory pilotage and reasons for denial;
- maintain the current regional system for training and licensing pilots;
- report on the pool of qualified candidates in annual reports, including identifying any problems and corrective measures to address them;
- develop, through consultation, and implement a fair and reasonable system for assessing pilots' competence and quality of service;
- examine regularly all aspects of each authority's operations to improve efficiencies and further reduce costs;
- maintain the Act as it relates to the composition of boards of directors (i.e. no changes);
- plan regular consultations with interested parties on financial, operational and planning issues that affect such parties;
- establish a system for early release of practical information about minor incidents;
- establish a structured methodology for handling complaints, ensuring timely feedback about the outcome or the action taken to the complainant; and
- submit a plan to the Minister of Transport, within six months of tabling of the report, that sets out in order of priority the proposed implementation and anticipated completion date of all the Canadian Transportation Agency's recommendations.

The recommendations which apply to specific pilotage authorities have to do with a number of matters such as the development of material relevant for certification purposes and a description of certification exam expectations; a risk-based assessment to determine double pilotage requirements; a risk-based assessment of vessel-size limit and the types of vessels subject to compulsory pilotage; amendment of an authority's regulations for exempting vessels from compulsory pilotage; adding a provision allowing for the revocation of an exemption from compulsory pilotage.

### FINANCIAL AND OPERATING PERFORMANCE

In 1999, pilotage revenues, on a nationwide basis, once again exceeded expenditures. As shown in Table 10-21, three of the four pilotage authorities managed to return modest surpluses, while the Great Lakes Authority's loss was covered by its retained earnings.

TABLE 10-21: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1999

	(Thousands of dollars)		Net Income
	Revenues	Expenditures	(Loss)
Atlantic	10,777	9,985	792
Laurentian	41,689	41,213	476
Great Lakes	14,545	14,898	(353)
Pacific	39,106	38,781	325
<b>Totals</b>	<b>106,117</b>	<b>104,877</b>	<b>1,240</b>

Source: Pilotage authorities' annual reports (preliminary)

The results for 1999 represent a continuation of the trend toward positive net incomes over the last few years. Financial results for each authority from 1995 to 1999 are shown in Table 10-22.

TABLE 10-22: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1995 - 1999

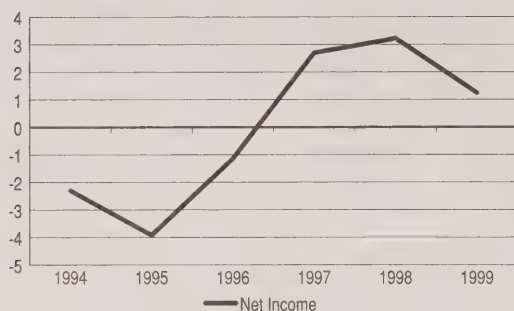
		(Millions of dollars)		Net Income
Region	Year	Revenues	Expenditures	(Loss)
<b>Atlantic Pilotage Authority (APA)</b>	1995	7,642	7,584	58
	1996	8,030	7,538	492
	1997	9,638	8,595	1,043
	1998	9,466	8,796	670
	1999	10,777	9,985	792
	Per cent change	<b>13.8</b>	<b>13.5</b>	<b>18.2</b>
<b>Laurentian Pilotage Authority (LPA)</b>	1995	34,367	38,544	(4,177)
	1996	36,019	38,847	(2,828)
	1997	38,185	39,019	(834)
	1998	41,311	40,847	464
	1999	41,689	41,213	476
	Per cent change	<b>0.9</b>	<b>0.9</b>	<b>2.6</b>
<b>Great Lakes Pilotage Authority (GLPA)</b>	1995	11,318	9,978	1,340
	1996	12,659	11,643	1,016
	1997	13,251	12,041	1,210
	1998	17,249	15,548	1,701
	1999	14,545	14,898	(353)
	Per cent change	<b>(15.7)</b>	<b>(4.2)</b>	<b>(120.8)</b>
<b>Pacific Pilotage Authority (PPA)</b>	1995	34,221	35,363	(1,142)
	1996	36,039	35,859	180
	1997	39,802	38,519	1,283
	1998	37,441	37,056	385
	1999	39,106	38,781	325
	Per cent change	<b>4.4</b>	<b>4.7</b>	<b>(15.6)</b>
<b>Total Pilotage Authorities</b>	1995	87,548	91,469	(3,921)
	1996	92,747	93,887	(1,140)
	1997	100,876	98,174	2,702
	1998	105,467	102,247	3,220
	1999	106,117	104,877	1,240
	Per cent change	<b>0.6</b>	<b>2.6</b>	<b>(61.5)</b>

Source: Pilotage authorities' annual reports (1999 preliminary)



Total revenues have risen only slightly, while expenses have generally kept pace with inflation over the five-year period. Nevertheless, Figure 10-9 shows clearly the trend toward improved bottom lines for pilotage authorities.

**FIGURE 10-9: PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 1999**  
(Millions of dollars)



Source: Pilotage authorities' annual reports (1999 preliminary)

To measure efficiency of pilotage services, the average number of assignments per pilot is commonly used. Based on this measure, efficiency has increased between 1995 and 1999 by 3.1 per cent.

Table 10-23 shows the number of assignments for each pilotage authority and the total for all authorities between 1995 and 1999. The variations among the authorities and the fluctuations over the period are in response to traffic levels. Overall, total assignments have grown by 9.4 per cent since 1995.

**TABLE 10-23: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1995 – 1999**

Pilotage Authority	Indicators	1995	1996	1997	1998	1999
Atlantic (APA)	Total Assignments	8,668	8,576	9,760	9,726	11,090
	Assignments per Pilot	180	186	212	187	213
Laurentian (LPA)	Total Assignments	21,937	21,342	20,941	22,018	21,654
	Assignments per Pilot	127	123	120	121	120
Great Lakes (GLPA)	Total Assignments	6,091	6,901	7,192	9,085	8,108
	Assignments per Pilot	107	121	113	147	118
Pacific (PPA)	Total Assignments	13,199	13,403	14,212	13,267	13,776
	Assignments per Pilot	115	113	124	115	117
Total All Authorities	Total Assignments	49,895	50,224	52,105	54,096	54,628
	Assignments per Pilot	127	126	129	132	131

Source: Pilotage Authorities Annual Reports.

## CANADIAN COAST GUARD

### RESPONSIBILITIES

The Canadian Coast Guard's (CCG) mission is to ensure safe and environmentally responsible use of Canada's waters; support understanding and management of ocean resources; facilitate the use of Canada's waters for shipping, recreation and fishing; and provide marine expertise in support of Canada's domestic and international interests.

The Coast Guard has undergone major restructuring over the past several years as it merged with the Department of Fisheries and Oceans (DFO). In keeping with this new partnership and with its main role of ensuring safe and environmentally responsible use of Canada's waterways, the Coast Guard works with its counterparts in the DFO sector to advance the department's oceans mandate.

The Coast Guard is divided into five business lines that cover all five regions of DFO. These five lines include: marine navigation services; marine communications and traffic services; icebreaking operations; rescue, safety and environmental response activities; and fleet management.

Under these business lines, the Coast Guard delivers a wide range of marine programs, policies and services that encompass several sectors within the marine community: commercial shipping interests, recreational boaters, the fishing industry, ferry services, tug and barge re-supply operations in the North, cruise lines, private-sector shippers, and provincial, municipal and territorial governments, as well as federal government departments.

In addition, the Coast Guard serves the general public through its role in protecting their interest in preserving ecosystems, ensuring water supplies remain unpolluted by oil and chemical spills, and protecting recreational resources.

The Department of Fisheries and Oceans has two key result commitments: the conservation and biological sustainability of fisheries resources, marine and freshwater habitats and a protected environment; and the provision of safe, efficient and accessible waterways and harbours. The Coast Guard's contributions to these commitments are found in each of its business lines. These include such areas as response to marine oil emergencies, efficient and effective aids to navigation infrastructure, annual deliveries by ship to northern settlements and military sites, and client and public awareness of programs and policies.

## Marine Navigation Services

The Coast Guard's Marine Navigation Services (MNS) group provides, operates and maintains a system of navigational aids that include 262 automated light stations, 52 of which are staffed; 5 LORAN C communication stations; 18 Differential Global Positioning System (DGPS) transmitter sites; more than 6,000 land-based fixed marine aids; and more than 13,000 floating aids. In addition, the group develops and maintains waterways, ensures the public's right to navigation is protected, and protects the environment. These responsibilities are in keeping with the Department of Fisheries and Oceans' commitment to safe, efficient and accessible waterways.

The Marine Navigation Services division will continue with and move forward on a number of activities in support of its mission, including continuing to modernize aids to navigation through several initiatives. One of these is the complete implementation of a full DGPS by the spring of 2000. In addition, the division will continue to modernize, maintain, implement and upgrade information systems such as national databases on the use of Canadian waterways, the Aids Program Information System (APIS), the Marine Aids Costing Model (SRAN) and the Navigable Waters Database System. Marine Navigation Services will also pursue amendments to the *Navigable Waters Protection Act*.

## Marine Communication and Traffic Services

Marine Communication and Traffic Services provides distress and safety communications and co-ordination; vessel screening to prevent entry of unsafe vessels into Canadian waters; regulation of vessel traffic movements; and management of an integrated system of marine information and public correspondence services. In addition to ensuring safe marine navigation, Marine Communication and Traffic Services supports economic activities by optimizing traffic movements and port efficiency, and facilitating industry ship/shore communications. All of these functions are derived from a regulatory framework that is based primarily on the *Canada Shipping Act* and the *Safety of Life at Sea Convention*.

The group's supporting infrastructure includes staffed communications centres and remote transmitter and receiver sites.

By the nature of its operations, Marine Communication and Traffic Services is a key element of the national movement toward sustainable development for oceans and marine resources. It fully supports Oceans Strategy by exploring ways to improve the monitoring and management of protected marine areas.

The group is also improving its surveillance capability by developing implementation strategies for universal Automatic Identification Systems (AIS) technology, a leading-edge marine navigation technology that offers both mariners and competent authorities a more efficient and cost-effective means of service delivery. This group also improves communications capability by continuing the implementation of the Global Maritime Distress Safety System (GMDSS), as well as continually reviewing infrastructure to provide possibilities for further efficiencies through the application of technological changes.

## Icebreaking Operations

Icebreaking operations include such activities as providing icebreaking escorts, channel maintenance, flood control, harbour breakouts, and ice-routing and information services for marine traffic navigating through or around ice-covered waters. This business line also co-ordinates the movement of cargo for the annual re-supply of northern settlements and military sites using contracted commercial carriers.

The Icebreaking Program has moved from its traditional role of providing a wide range of free services to a more client-focused, demand-driven service role that reflects recent downsizing activities. Commercial users now pay a percentage of the allocated costs in the form of an icebreaking service fee. The program's challenge in providing these services is to match the ice season and client requirements with service capacity on a year-to-year basis so that resources are used efficiently.

The program also maintains international expertise and recognition through its involvement with the US Coast Guard, North Atlantic Ice Patrol and other governments involved in icebreaking. It has also strengthened its alliance with Transport Canada's Marine Safety Branch for the Harmonization of Polar Ship Rules, to protect Canada's position and take a proactive role in forums dealing with ice operations or ships operating in ice-covered water. An economic study on the benefits of icebreaking services continues; preliminary results indicate that benefits far outweigh the costs of the service.

## Rescue, Safety and Environmental Response

The objective of the Rescue, Safety and Environmental Response (RSER) group is to save lives and protect the marine environment. The group provides maritime search and rescue (SAR) services, and environmental response and departmental national emergency preparedness. It also promotes boating safety to the public through prevention and regulation. The group's supporting infrastructure

includes search and rescue stations with in-shore rescue boats, as well as several spill-response equipment depots.

This group implemented a number of major new measures to improve boating safety in 1999. These include ensuring mandatory operator competency, age and horsepower restrictions, and modernizing small vessel regulations; and improving the effectiveness of oil spill preparedness and response regime through a review of the regime's regulations, standards and guidelines. In addition, the group continued to develop a hazardous and noxious substances response regime for Canada by maintaining consultations with major stakeholders and providing an effective maritime search and rescue service through quality initiatives and enhanced evaluations.

### Fleet Management

The goal of the Fleet Management group is to provide a safe, efficient and cost-effective sea and air fleet and the related services necessary to support Department of Fisheries and Oceans program activities, as well as improve client satisfaction. In keeping with this goal, the Fleet Management group acquires, maintains and schedules the department's sea and air fleets in support of the following program areas: Marine Navigation Services; Marine Communications and Traffic Services; Icebreaking Operations; Rescue, Safety and Environmental Response; Fisheries Management; and Fisheries and Oceans Science and Hydrography. The funding to crew and operate the fleet is provided by the particular program areas. Fleet Management also arranges for any necessary increase in fleet capabilities by co-ordinating with other government departments and the private sector to provide additional sea and air support to the programs.

Fleet Management is in the process of moving toward a base-fleet concept in which an established minimum number of vessels would deliver the program requirements and provide a stable base for financial, operational and human resource planning. The group is also continuing to implement the fleet safety management system to meet

**TABLE 10-24: CANADIAN COAST GUARD, VESSEL, AIRCRAFT AND FACILITY ASSETS, 1999**

<i>Vessels and Aircraft</i>	<i>CCG Facilities</i>
125 major ships	11 major bases
500+ Small craft <sup>1</sup>	8 sub-bases
23 inshore rescue boats	22 MCTS centres
4 air cushion vehicles	48 SAR bases
28 rotary-wing aircraft	
3 fixed-wing aircraft <sup>2</sup>	

<sup>1</sup> Includes lifeboats, surf boats, self-propelled barges, small craft carried on larger ships, shore-based work boats, floating spill boats, oil slick-lickers, and other small craft at CCG bases and light stations.

<sup>2</sup> Two owned by Transport Canada and one chartered.

Source: Department of Fisheries and Oceans

the standards of the International Management (ISM) Code for the Safe Operation of Ships. Future plans for the group include implementing a costing model to give managers and clients a true understanding of the cost of fleet operations.

### FINANCIAL PERFORMANCE

Through a combination of efficiency measures and reduced operations, resulting in lower expenses, the Coast Guard has permanently reduced its net expenditures on the services described above by \$140 million, or 30 per cent, over the four-year period ending 1998/99. Table 10-25 shows the Coast Guard's financial results for its five major business lines from 1995/96 to 1999/2000.

**TABLE 10-25: CANADIAN COAST GUARD, REVENUES AND EXPENDITURES, 1995/96 – 1999/2000**

	(Millions of dollars)				
	1995/96	1996/97	1997/98	1998/99	1999/2000 <sup>1</sup>
Revenue (1)	11.5	27.3	37.3	39.9	48.5
Gross Expenditures (2)	533.4	540.2	522.8	471.0	514.1
Net Expenditures (1)-(2)	521.9	512.9	485.5	431.1	465.6

<sup>1</sup> 1999/2000 reflects forecasted expenditures to year-end and will not be finalized until the end of the fiscal year.

Source: Department of Fisheries and Oceans (Canadian Coast Guard), includes Marine Navigation Services (MNS), Marine Communication and Traffic Services (MCTS), Icebreaking Services, Rescue, Safety and Environmental Response (RSER), and Fleet Management.

The Coast Guard has implemented user fees for some programs to obtain a fair contribution from users for programs from which they directly benefit. The Marine Navigation Services Fee was first introduced in June 1996. It offsets, on average, 27 per cent of the full costs of providing marine navigational services to the commercial shipping industry.

In September 1997, a Maintenance Dredging Services Tonnage Fee for the St. Lawrence Ship Channel was introduced. This fee is only an interim measure to cover the total costs incurred by the Coast Guard to provide these dredging services. The Coast Guard is currently working with representatives of the marine transportation industry to arrive at a long-term arrangement, including the possibility of transferring responsibility for these dredging services to industry.

On December 4, 1998, the Minister of Fisheries and Oceans outlined elements for a revised Icebreaking Services Fee (ISF) proposal that would generate \$6.65 million annually plus administrative costs. The proposal is built around a transit-based icebreaking fee that will be uniformly applied to each transit to, from or within the



ice zone during the ice season. Table 10-26 shows the breakdown of the Coast Guard's revenues and expenditures by its five main business lines for the fiscal year 1999/2000.

**TABLE 10-26: REVENUES AND BUDGETED EXPENDITURES OF THE CANADIAN COAST GUARD, 1999/2000**

	(Millions of dollars)					
	----- Business Line -----					
	MNS	MCTS	ICE	RSER	Fleet Mgmt.	CCG Total
Revenues (1)	28.3	0.3	14.8	0.1	0.0	48.5
Gross Expenditures (2)	131.6	75.3	61.2	104.1	141.9	514.1
Net Expenditures [(1)-(2)]	103.3	75.0	41.4	104.0	141.9	465.6

Notes: MNS = Marine Navigation Services; MCTS = Marine Communication and Traffic Services; ICE = Ice Breaking Services; RSER = Rescue, Safety and Environmental Response; CCG = Canadian Coast Guard.

Source: Department of Fisheries and Oceans (Canadian Coast Guard), including Marine Navigation Services (MNS), Marine Communication and Traffic Services (MCTS)

## AIR TRANSPORTATION INFRASTRUCTURE

### AIR NAVIGATION SYSTEM

Since November 1, 1996, Canada's Air Navigation System (ANS) has been managed by NAV Canada, a private, non-share capital corporation. The Air Navigation System is made up of seven area control centres (ACC), one stand-alone terminal control unit, 43 control towers, 78 flight service stations and 67 maintenance centres, plus more than 1,400 ground-based navigational aids. The system provides services that include air traffic control, flight information, weather briefings, airport advisories and electronic aids to navigation.

During 1999, NAV Canada used a due diligence approach to risk-manage the Y2K issue from a safety perspective. It completed the identification, assessment and upgrade of systems that were identified as potential Y2K problems, and jointly tested systems with the Department of National Defence, various airport authorities, the US Federal Aviation Authority and the UK Aviation Authority. The corporation also put contingency plans in place and ensured that all changes to its information technology environment were monitored and Y2K-assessed. As a result of these efforts, all NAV Canada operational systems successfully made the transition to the Year 2000.

### AIR NAVIGATION OPERATIONS

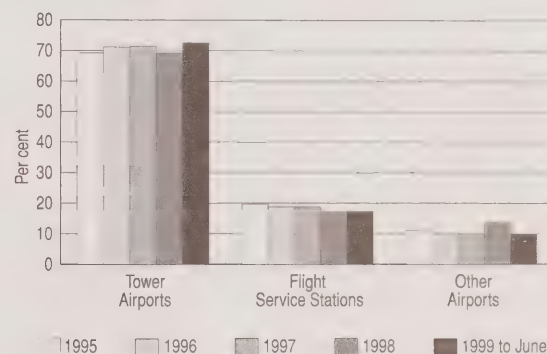
In the fiscal year ending August 31, 1999, NAV Canada centralized its operations by merging its Pacific, Western and Central offices into one regional office in Edmonton, saving

\$12 million. As part of the next stage in the consolidation of administrative functions, the company has initiated plans to create an Eastern Regional Office that will consolidate the Ontario, Quebec and Atlantic regional offices.

The air navigation system supported some 3.6 million aircraft arrivals and departures at Canadian airports in the first six months of 1999. This was 0.3 per cent more than in the same period of 1998.

The distribution of aircraft arrivals and departures by type of airport category is shown in Figure 10-10. The partial year figures for 1999 reflect the slightly higher proportion of traffic at towered airports during the winter months.

**FIGURE 10-10: AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1995 - 1999**



Source: Transport Canada, Aircraft Movement Statistics TP-577

At the end of December 1999, the company had 156 air traffic controller trainees not yet licensed. The complement of air traffic controllers, control towers and area control centres for 1995 to 1999 are listed in Table 10-27.

**TABLE 10-27: SUMMARY OF CANADA'S AIR TRAFFIC CONTROLLERS, TOWERS, AREA CONTROL CENTRES, AND TERMINAL CONTROL UNITS, 1995 - 1999**

Year	Air Traffic Controllers <sup>1</sup>	Towers	Area Control Centres	Terminal Control Units
1995	1,959	45	7	2
1996	1,927	44	7	2
1997	1,956	44	7	1
1998	1,952	44	7	1
1999	1,912	43	7	1

<sup>1</sup> Licensed operational controllers.

Source: NAV Canada

The total number of towers dropped by one in 1999 with the closure of North Bay's tower in March. The number of area control centres has remained constant since 1995. A NAV Canada study on airspace sectorization was based on the clear statement that no centres were to close.



## SYSTEM IMPROVEMENTS

Estimates for 1999/2000 show investment by NAV Canada in technology to be about \$100 million to \$125 million. Along with Y2K projects, the corporation's other major project in 1999 was the installation of back-up power systems in all area control centres.

NAV Canada began hubbing its maintenance operations in 1999, allowing a reduction in the number of maintenance centres while continuing to meet its published maintenance response time policy. Such a change was made possible by the increased reliability of technology and the redundancies built into the system. Completion of the implementation is targeted for August 2000, by which time there will be a total of 46 centres.

In October 1999, NAV Canada announced \$40 million in new capital projects designed to enhance the safety of the ANS and improve customer service. As some of these projects are multi-year, only a portion of this investment is included in the 1999/2000 fiscal-year total. These projects include:

- new radar systems in Yellowknife and Kuujuaq
- a new digital voice communications system for towers and flight service stations across the country
- new and updated radar processing hardware and software
- a new control tower for Kelowna.

## FINANCIAL PERFORMANCE

NAV Canada fully implemented user fees on November 1, 1998, when the Air Transportation Tax was abolished completely, along with transition-period payments. Increases to user fees scheduled for that time were deferred to March 1, 1999, saving commercial airlines around \$72 million according to NAV Canada estimates.

With the abolition of transition payments by the government to NAV Canada, the corporation became totally dependent financially on its customers to generate sufficient revenues to cover all its costs. The corporation's user-fee structure is in accordance with the *Civil Air Navigation Services Commercialization Act*, which restricts the corporation's revenues to an amount that includes "reasonable prudent reserves" above the costs of operation.

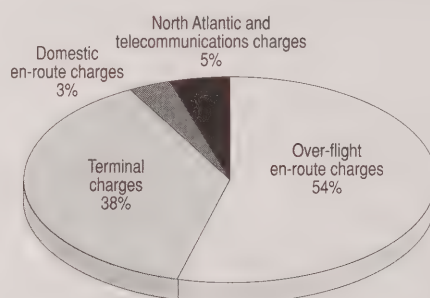
NAV Canada collects its revenues in the form of charges levied on aircraft operators for the provision or availability of air navigation services. The charging system consists of terminal and enroute charges, overflight charges and oceanic charges. Aircraft weighing three metric tonnes or less pay a flat annual fee, while aircraft weighing greater than three metric tonnes are charged on a per movement or daily basis.

On September 1, 1999, NAV Canada introduced service charge reductions that are expected to save users \$100 million in the ensuing 12 months. These changes resulted in a reduction of fees for major services that vary from 7.5 per cent to 13.7 per cent, depending on the service.

At applicable airports north of 60° N, Terminal Service Charges are being introduced in two phases, the first of which began November 1, 1999.

Figure 10-11 shows the fee sources for NAV Canada in percentage terms for 1999.

FIGURE 10-11: NAV CANADA FEE SHARES, 1999



Source: NAV Canada

For the fiscal year ending August 31, 1999, NAV Canada reported \$933 million in revenues, \$711 million in operating expenses, and \$215 million in interest, depreciation and restructuring expenses. This resulted in an excess of revenues over expenses of \$7 million. This compares with 1998 fiscal results of \$892 million in total revenues, \$715 million in operating expenses, and \$172 million in interest, depreciation and restructuring expenses for a \$6 million excess of revenues over expenses. Table 10-28 compares NAV Canada financial results for 1998 and 1999.

TABLE 10-28: FINANCIAL SUMMARY FOR NAV CANADA, 1998 – 1999  
(Thousands of dollars)

Item	1999	1998
Total Revenue	933,120	892,490
Operating Expenses	710,640	714,682
Other Expenses	215,537	171,827
Excess of Revenue over Expenses	6,943	5,981
<b>Capital Expenditures</b>	<b>122,555</b>	<b>126,488</b>

Source: NAV Canada Annual Report, 1999

## AIRPORTS

Canada has approximately 1,800 aerodromes, the generic name for facilities registered with Transport Canada as aircraft landing and take-off sites. They are divided into three categories: water bases for float and ski planes, heliports for helicopters, and land airports for fixed-wing aircraft.

The more developed and active of these sites must meet Transport Canada airport certification standards. By the end of 1999, there were approximately 750 certified sites in all three categories, representing a 19 per cent increase over the 631 reported in 1998. This increase is due to clarifications in the requirements for certification "within a built-up area," which resulted in the addition of several helicopter landing sites (at hospitals, for example) that had not previously been certified.

The number of certified land airports — at which the majority of commercial aviation activity takes place — has remained relatively stable since 1998. Of the total certified sites, 354 were certified as land airports for fixed-wing aircraft in 1999.

Table 10-29 shows that of the total of 1,110 sites in the land airport category, 238 offered scheduled passenger services in 1999, while the remaining 872 were available for other public and private uses.

**TABLE 10-29: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 1999**

Airport type	Number	Airport service	Number
Certified Land Airports	354 <sup>1</sup>	Airports with Scheduled Passenger Service	238 <sup>2</sup>
Registered Land Aerodromes	742	Airports/Aerodromes without Scheduled Passenger Service	872
Military (land) Aerodromes	14		
<b>Total</b>	<b>1,110</b>	<b>Total</b>	<b>1,110</b>

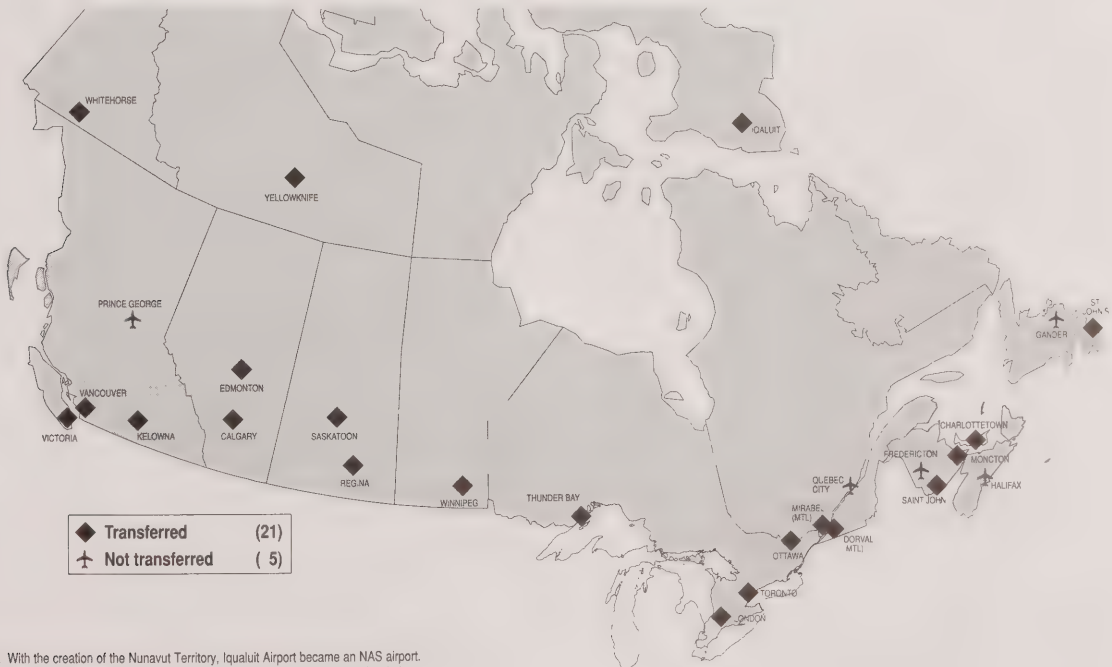
1 Canada Flight Supplement, December 1999

2 Official Airline Guide

Source: Transport Canada

Over 94 per cent of all commercial passenger air traffic in Canada is handled by 30 airports.<sup>8</sup>

**FIGURE 10-12: MAP OF AIRPORTS DIVESTITURE, 1999 – NATIONAL AIRPORT SYSTEM AIRPORTS**

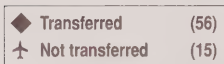


Note: With the creation of the Nunavut Territory, Iqaluit Airport became an NAS airport. Sudbury was removed from the NAS and is now considered a regional/local airport.

Source: Transport Canada

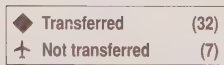
8 Top 30 airports in terms of enplaned plus deplaned passengers.

FIGURE 10-13: MAP OF AIRPORTS DIVESTITURE, 1999 – REGIONAL / LOCAL AIRPORTS



Source: Transport Canada

FIGURE 10-14: MAP OF AIRPORTS DIVESTITURE, 1999 – SMALL AND ARCTIC AIRPORTS



Source: Transport Canada

Prior to 1994, Transport Canada owned, operated or subsidized 149 airports. Since the introduction of the 1994 National Airports Policy (NAP), however, most of these have been transferred to locally based operators, either by way of lease — as is the case with the major airports within the National Airports System (NAS) — or sale.<sup>9</sup>

In 1999, airports in Saskatoon, Regina, Charlottetown and Saint John were transferred to not-for-profit airport authorities. Halifax was transferred at the beginning of the year 2000, leaving only four NAS airports under Transport Canada management. Figures 10-12, 10-13 and 10-14 show the location of each airport and its divestiture status as of December 31, 1999.

Over the past year, airport authorities continued to pursue improvements to airport infrastructure, operations and customer service. Victoria, Saskatoon, Ottawa and St. John's announced expansion and renovation plans, while Vancouver, Calgary, Edmonton, Montreal, Toronto and Moncton continued to implement capital improvement programs they had started in previous years. Airline restructuring initiatives introduced toward the end of 1999 may affect the timing of expansion at some airports. All airports are examining the potential impact to their particular environments.

By the end of 1999, most airport authorities had introduced airport improvement fees (AIFs) as a means of funding capital projects. In addition, most had entered into agreements whereby the airlines collect airport improvement fees from passengers at the time of ticket purchase. The amount of the airport improvement fee is shown separately on the ticket.

Table 10-30 lists the airports that charge airport improvement fees, as well as when they started and the amount collected in 1998.

## REVIEW OF AIRPORT AUTHORITY LEASES

Between 1997 and 1999, Transport Canada conducted a review of the Vancouver, Calgary, Edmonton and Montreal airport authorities. Established in 1992, they were the first four locally based airport authorities to operate airports. The *LAA Lease Review Consultation Report*, which was made available to stakeholders in April 1999, found the airport transfer policy to be a success. Canada has seen a rapid expansion at several National Airport System airports, at no cost to the taxpayer, and the provision of better service to the travelling public. The review confirmed that the government's decision to commercialize its key airports was a sound one, and that the 1994 National Airports Policy was a positive step.

**TABLE 10-30: AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS, DECEMBER 31, 1999**

Airport	Airport Improvement Fee		Amount Collected (\$'000) 1998	Collected directly <sup>1</sup>	Collected through tickets <sup>2</sup>
	Charge per Passenger	Date			
Vancouver	\$5-\$15 <sup>3</sup>	May 1993	53,834	X	
Calgary	\$10 <sup>4</sup>	Jan. 1999	14,736		X
Edmonton	\$5-\$10 <sup>5</sup>	April 1997	14,310		X
Montreal	\$10	Nov. 1997	30,275	X	
Kelowna	\$5	Feb. 1998	-		X
Winnipeg	\$5	July 1998	2,196		X
Thunder Bay	\$10	Mar. 1998	1,369	X	
Moncton	\$10	Oct. 1998	307	X	
Ottawa	\$10	Sept. 1999	-		X
Regina	\$10	Sept. 1999	-		X
St. John's	\$10	Sept. 1999	-		X
Saint John	\$9	Sept. 1999	-	X	
Saskatoon	\$5	Sept. 1999	-		X
Victoria	\$10	Oct. 1999	-		X
London	\$3	April 1999	-		X

1 Fees collected directly from passengers before embarking.

2 Collected through tickets: fees included automatically in the price of each departing ticket through an AIF agreement.

3 Vancouver: for destinations within British Columbia and Yukon, \$5; other North America, Mexico and Hawaii, \$10; other international, \$15.

4 Calgary: the AIF from October 1997 to December 1998 was \$5 per passenger and changed to \$10 beginning January 1999.

5 Edmonton: the AIF was \$5 for destinations within Alberta and \$10 outside Alberta; As of January 1, 2000, it is \$10 for all destinations.

Source: Data from 1998 airport authority annual reports and Web sites

The report also concluded that notwithstanding the many successes, some refinements should be considered to ensure the continued effectiveness of the policy. In particular, the review noted deficiencies in transparency relating to pricing practices and financial reporting by some local airport authorities. In keeping with these conclusions, it is expected that several "best practices" in place at some of the airports will be made standard across the National Airport System when the review is completed.

## FINANCIAL PERFORMANCE

### Airport Authorities' Revenues and Expenses

National Airports System airports are expected to eventually reach financial self-sufficiency. Airport authorities, incorporated as not-for-profit organizations with no equity shareholders, fund their operations and improvements with revenues derived from airport users. Under leases, the federal government (the owner of the airports) collects rent from the airport authorities.

In 1999, ten airport authorities issued annual reports for the full calendar year 1998. These financial results are summarized in Table 10-31. With 67.2 million enplaned/deplaned passengers, these airport authorities generated on

9 More detailed information on the National Airports Policy and the status of airport divestitures is available on Transport Canada's Web site at [www.tc.gc.ca/en/airports.htm](http://www.tc.gc.ca/en/airports.htm).



TABLE 10-31: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1998

(Thousands of dollars)

<i>Financial Information</i>	<i>Calgary</i>	<i>Vancouver</i>	<i>Edmonton</i>	<i>Montreal</i>	<i>Toronto</i>	<i>Ottawa</i>	<i>Winnipeg</i>	<i>Victoria</i>	<i>Moncton</i>	<i>Thunder Bay</i>	<i>TOTAL</i>
Aeronautical Revenues	29,746	72,509	14,940	47,809	222,543	17,106	10,992	3,457	1,823	3,034	423,959
Non-Aeronautical Revenues	34,356	110,370	22,400	76,496	149,688	16,441	12,585	4,187	1,481	2,208	430,211
Airport Improvement Fee	14,736	53,834	14,310	30,275	0	0	2,196	0	307	1,369	117,027
<b>Sub-Total Revenues</b>	<b>78,838</b>	<b>236,713</b>	<b>51,650</b>	<b>154,580</b>	<b>372,231</b>	<b>33,547</b>	<b>25,773</b>	<b>7,644</b>	<b>3,611</b>	<b>6,610</b>	<b>971,197</b>
Expenses (less Interest Charges)	53,225	150,168	36,888	137,650	285,671	29,019	21,928	6,109	4,320	3,655	728,632
<b>Income</b>	<b>25,613</b>	<b>86,545</b>	<b>14,762</b>	<b>16,930</b>	<b>86,560</b>	<b>4,528</b>	<b>3,845</b>	<b>1,535</b>	<b>(709)</b>	<b>2,955</b>	<b>242,565</b>
Interest Charges	0	21,928	(27)	151	56,019	175	0	0	9	18	78,273
<b>Net Income</b>	<b>25,613</b>	<b>64,617</b>	<b>14,789</b>	<b>-16,779</b>	<b>30,541</b>	<b>4,353</b>	<b>3,845</b>	<b>1,535</b>	<b>(718)</b>	<b>2,937</b>	<b>164,292</b>
Acquisition of capital assets	63,645	73,421	37,199	56,452	193,749	3,643	5,107	2,032	875	127	436,250
Enplaned / Deplaned Passengers	7,659	14,473	3,792	8,647	25,000	2,750	2,883	1,214	280	504	67,203
<b>Ratios</b>											
% of Operating	67.51	63.44	71.42	89.05	76.75	86.50	85.08	79.92	119.62	55.29	75.02
% of Aeronautical Revenues Vs Total	37.73	30.63	28.93	30.93	59.79	50.99	42.65	45.23	50.49	45.90	43.65
% of Non-Aeronautical Revenues Vs Total	43.58	46.63	43.37	49.49	40.21	49.01	48.83	54.77	41.00	33.40	44.30
% of AIF Vs Total Revenues	18.69	22.74	27.71	19.59	0.00	0.00	8.52	0.00	8.51	20.71	12.05
<b>Total Revenues per passenger</b>	<b>10.29</b>	<b>16.36</b>	<b>13.62</b>	<b>17.88</b>	<b>14.89</b>	<b>12.20</b>	<b>8.94</b>	<b>6.30</b>	<b>12.90</b>	<b>13.10</b>	<b>14.45</b>
<b>Total Expenses per passenger</b>	<b>6.95</b>	<b>10.38</b>	<b>9.73</b>	<b>15.92</b>	<b>11.43</b>	<b>10.55</b>	<b>7.61</b>	<b>5.03</b>	<b>15.43</b>	<b>7.24</b>	<b>10.84</b>

Note: **Aeronautical and Non-aeronautical Revenues:** Aeronautical revenues are generated principally from airlines and other commercial aviation sources, and consist mainly of landing fees and terminal fees. Revenues from concessionaire sales (stores, restaurants, etc.), car parking, and space rental are considered non-aeronautical.

Source: Airport Authority 1998 annual reports

average \$14.45 per passenger in revenues and incurred expenses of \$10.84 per passenger in 1998. In addition, the airports combined spent a total of \$436.3 million on the acquisition of capital assets. All ten airport authorities, with the exception of Moncton, showed a net profit in 1998. Moncton generated revenues from airport improvement fees for only a portion of the year.

In 1998, the ten airport authorities generated total revenues of \$971.2 million, with total expenses (before interest) of \$728.6 million. Revenues of \$424.0 million from aeronautical sources represented 43.7 per cent of their total revenues as a group. Individually, the percentage of total revenues generated from aeronautical sources ranged from 28.9 to 59.8 per cent.

In 1998, non-aeronautical revenues (excluding airport improvement fees) totalled \$430.2 million, or 44.3 per cent of all revenues generated by these ten airport authorities. On a site-by-site basis, the percentages ranged from 33.4 per cent at Thunder Bay, to 54.5 per cent at Victoria. Airport improvement fees generated \$117.0 million, or 12.1 per cent of total revenues.

### Transport Canada's Revenues and Expenses

With the transfer of airports to locally based airport authorities, Transport Canada's expenditures and revenues from the operation of airports are declining, while lease revenues are increasing. In 1998/99, Transport Canada spent \$179.8 million on the operation of airports and took in revenues of \$78.2 million. It received an additional

\$190.2 million in rent from the airport authorities. For fiscal year 1999/2000, Transport Canada forecasts \$165.6 million in spending, \$53.8 million in revenues and \$211.2 million in rent.

### AIRPORT CAPITAL ASSISTANCE PROGRAM

The Airport Capital Assistance Program (ACAP) was established in April 1995 to help eligible non-National Airport System airports finance capital projects related to safety, asset protection and operating-cost reduction. To be eligible for this funding, the airports must receive a minimum of 1,000 regularly scheduled passengers annually, meet airport certification requirements and not be owned by the federal government.

In 1999, 47 projects at 56 airports were approved for funding, at a total estimated cost of \$30.4 million. Approved projects included the rehabilitation of runway, taxiway and apron pavements; the purchase of mobile equipment, such as runway sweepers, snow blowers and sander trucks; the refurbishment of air terminal buildings; the purchase and installation of visual aids; and the installation of security fencing.

After an evaluation of the Airport Capital Assistance Program, Transport Canada concluded in 1999 that the rationale behind, and the delivery of, the program is consistent with the department's top priority — safety — and should therefore continue.

Table 10-32 summarizes Airport Capital Assistance Program expenditures by province from 1995/96 to 1998/99.

**TABLE 10-32: AIRPORT CAPITAL ASSISTANCE PROGRAM  
EXPENDITURES BY PROVINCE, 1995/96 – 1998/99**

(Thousands of dollars)

<i>Province</i>	<i>1995/96</i>	<i>1996/97</i>	<i>1997/98</i>	<i>1998/99</i>	<i>Total</i>
Newfoundland	-	-	-	-	-
Prince Edward Island	-	-	-	-	-
Nova Scotia	-	-	-	402	402
New Brunswick	509	885	1,087	4,553	7,034
Quebec	-	-	3,203	5,911	9,114
Ontario	909	3,233	13,465	7,617	25,224
Manitoba	151	172	970	2,187	3,480
Saskatchewan	-	2,877	452	1,575	4,904
Alberta	90	815	1,129	3,017	5,051
British Columbia	33	1,417	880	3,307	5,637
Northwest Territories	-	-	-	-	-
Yukon	-	-	-	-	-
Nunavut	-	-	-	-	-
<b>Total</b>	<b>1,692</b>	<b>9,399</b>	<b>21,186</b>	<b>28,569</b>	<b>60,846</b>

Source: Transport Canada

Appendix 10-1 lists the projects receiving funding approval under the program, by site and province in 1999.

## APPENDIX 10-1

## AIRPORTS CAPITAL ASSISTANCE PROGRAM – PROJECTS APPROVED IN 1999

Province	Site	Description	Funded	Project funding in thousands of dollars	
				Site Total	Province Total
Newfoundland	Churchill Falls Deer Lake	Rehabilitate Runway 13-31, Taxi "A" & Apron Various Airport Improvements / Mobile equipment	13.07.99 21.12.99	3,153.5 1,412.2	4,565.7
Prince Edward Island					0.0
Nova Scotia					0.0
New Brunswick	Bathurst St. Leonard	Heavy Mobile Equipment – Front-End Loader Various Airport Improvements	10.05.99 14.06.99	192.0 1014.2	1,206.2
Quebec	Gaspé Val d'Or La Grande Rivière	Rehabilitate Runway Rehabilitate airport installations Purchase of Heavy Equipment	08.03.99 08.07.99 14.10.99	4,529.8 696.0 305.5	5,531.3
Ontario	Nakina Dryden Earlton Fort Frances Dryden Fort Frances Geraldton North Bay Sault Ste. Marie Sault Ste. Marie Hamilton Windsor Hamilton Red Lake Sault Ste. Marie	Heavy Airside Mobile Equipment Fire Pump System Front End loader & Runway Sweeper Construction of an ATB Upgrade Airfield Lighting Purchase Loader Mounted Sweeper Rotating Beacon Replace Front End Loader & Runway Sweeper Ramp Plow Runway Friction Testing Equipment Snowplow Truck & Front End Loader Heavy Mobile Equipment – Runway Sweeper Crash/Fire Rescue Vehicle Replacement Side Tilt Sander Box Heavy Mobile Equipment – Plow Truck	16.02.99 05.03.99 05.03.99 26.04.99 07.06.99 02.07.99 22.12.99 02.07.99 16.07.99 18.10.99 20.10.99 22.10.99 09.11.99 02.12.99 09.12.99	27.5 63.5 325.7 332.5 606.0 177.5 5.5 265.0 10.0 4.3 289.7 148.4 312.6 47.0 113.9	2,729.1
Manitoba	Various Airports Dauphin Lynn Lake St. Andrews Flin Flon	Install Lighted Beacons at 19 Airports Rehab. Runway 08-26 and ATB Groundside Access Rehabilitate Runway 17-35, Taxi "A" & Apron Replacement of Runway Sweeper Replacement of Sand Spreader Truck	21.01.99 08.03.99 11.05.99 12.11.99 16.11.99	313.5 1,146.1 2,352.7 162.4 156.0	4,130.7
Saskatchewan	Fond-du-Lac Uranium City Fond-du-Lac Points North Landing La Ronge Wollaston Lake La Ronge	Rehabilitate Runway, Taxiway & Apron Heavy Mobile Equipment – Grader Installation/Restoration Safety Fencing Rehabilitation of Movement Surfaces ATB/FSS Operating Cost Reduction Rehabilitate Airside Surfaces Heavy Airside Mobile Equipment	01.03.99 08.03.99 11.03.99 06.04.99 08.04.99 12.04.99 05.10.99	2,096.3 274.5 428.5 1,700.3 70.0 1,698.6 497.9	6,766.1
Alberta	Grande Prairie Edmonton City Centre High Level Medicine Hat High Level Fort Chipewyan Lloydminster	Replace Runway Sweeper Rehabilitate Runway 12-30 Refurbish Visual Aids Groundside Access, ATB Roof & Beacon Heavy Airside Mobile Equipment Rehab. Airfield Pavements & Drainage Snow Plow Truck Replacement	18.05.99 13.07.99 23.07.99 26.08.99 05.10.99 12.11.99 23.11.99	176.0 718.4 312.8 88.3 305.9 2,172.3 143.0	3,916.7
British Columbia	Cranbrook Nanaimo Salmon Arm Anahim Lake Salmon Arm	PAPI Installation Taxiway Signage Replacement PAPI Installation Pavement Rehabilitation Heavy Mobile Equipment – Replace Sweeper	02.07.99 02.07.99 02.07.99 02.07.99 29.11.99	91.6 14.4 95.0 941.6 156.5	1,299.1
Northwest Territories	Yellowknife	Emergency Response Vehicle	19.08.99	230.4	230.4
				<b>Total</b>	<b>30,375.3</b>

Source: Transport Canada

# STRUCTURE OF THE TRANSPORTATION INDUSTRY 11

*While airline restructuring attracted a lot of attention in 1999, changes also took place in other modes.*

## RAIL INDUSTRY STRUCTURE

For many years, the rail freight industry consisted of two national railways, CN and CPR, plus five large regional rail carriers, a small number of US railway subsidiaries (operating only a short distance into Canada), and about a dozen switching, terminal or bridge railway companies, or some 30 railways in total. In recent years, Canada's rail industry has undergone dramatic change.

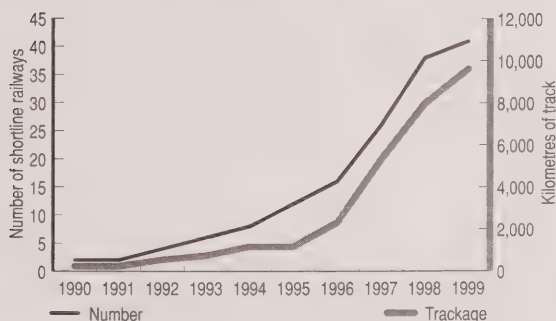
In the late 1980s and early 1990s, a modest number of recent-era<sup>1</sup> shortline railways began to appear. After 1995, however, the number of shortlines began to increase significantly, as illustrated in Figure 11-1. Since the late 1980s, over 40 shortline carriers have formed, operating more than 9,600 kilometres of track and having aggregate

annual revenues of almost \$140 million. Over 75 per cent of these new carriers were formed after 1995.

While the number of shortline carriers continues to grow, ownership has not. In 1998, six companies controlled the majority of shortlines formed since the late 1980s. In 1999, however, the makeup of the Canadian shortline industry changed. RailAmerica Inc.<sup>2</sup> purchased both RaiLink (the largest Canadian shortline company) and RailTex, increasing the concentration of ownership within the industry. RailAmerica currently owns nine operations in Canada (both coasts and numerous others in the Canadian interior), dominating the Canadian shortline scene in the number of rail operations, length of track and geographic distribution.

Table 11-1 shows the nature of ownership concentration within the Canadian shortline industry.

FIGURE 11-1: SHORTLINE INDUSTRY GROWTH, 1990 – 1999



Source: Transport Canada

TABLE 11-1: MAJOR SHORTLINE OPERATIONS IN CANADA, 1999

Corporation	Owned/Leased Trackage (kilometres)	Number of Canadian Railways Controlled
RailAmerica	3,562	9
RaiLink Properties	2,569	
RailTex Properties	707	
E&N Properties	286	
OmniTRAX	1,830	3
SCFQ <sup>1</sup>	1,216	4
Genesee Rail-One	771	2
Iron Road <sup>2</sup>	393	3

<sup>1</sup> Société des Chemins de fer du Québec.

<sup>2</sup> Does not include Northern Vermont which does not own track in Canada or the Bangor and Aroostock, which only comes a short distance into Canada.

Source: Transport Canada

1 Shortline and regional railways existed prior to this time, but were not termed such. The term "shortline" gained widespread acceptance following the explosive growth of this sector in the US during the early 1980s. This followed the passage of the *Staggers Rail Act*, which allowed railways, particularly the Class I railways in the US, to embark on the rationalization of their systems on a significant scale.

2 Previously, Rail America's only other Canadian property was the E&N Railway on Vancouver Island.



### CANADIAN NATIONAL (CN) / BURLINGTON NORTHERN SANTA FE (BNSF) COMBINATION

On December 20, 1999, the Canadian National Railway Company (CN) and Burlington Northern Santa Fe Corporation (BNSF) announced that their boards of directors had approved an agreement to combine their businesses, subject to shareholder and government regulatory approvals. Under the agreement, both railways intend to maintain their current regional operating and marketing focus, but share information technology, purchasing and selected marketing functions.

To implement the transaction, North American Railways Inc. is to be created as the parent company for BNSF and as the companion company for CN. Each company is to have the same shareholder base and each shareholder, the same economic benefits and voting rights.

#### Overview of operations

##### Canadian National Railway Company

- the largest rail network in Canada and the only transcontinental network in North America
- 26,000 kilometres of tracks
- serves 9 Canadian provinces and 15 US states
- serves the ports of Vancouver, Montreal, Halifax, New Orleans and Mobile (Alabama)
- has the shortest route from the Atlantic coast to the US Midwest
- employs roughly 23,500 employees in Canada and the US
- operates 1,650 locomotives and 66,000 freight cars
- operates an average of 265 scheduled freight trains per day.

##### Burlington Northern Santa Fe Corporation

- one of the largest rail systems in North America
- 54,000 kilometres of tracks
- serves 28 US states and 2 Canadian provinces
- serves all major West Coast ports and the Gulf of Mexico
- has the shortest route between the Pacific Northwest and Chicago and the only single-line service route between Southern California and the Southeast
- employs roughly 43,000 employees
- has about 5,000 locomotives (3,800 road units) and 98,000 rail cars
- operates an average of 1,300 freight trains per day.

FIGURE 11-2: CN AND BNSF RAIL NETWORK



Source: Transport Canada

Another recent change is the extent of US ownership. Of the five major corporations listed in Table 11-1, four are US-owned. While US companies have had a presence in Canada for some time, it was not until the recent Rail America acquisitions that US-based corporations assumed such a dominant role in the Canadian shortline industry.

These five corporations account for 63 per cent of the total number of shortline carriers formed since the passage of the *Canada Transportation Act* in July 1996, as well as over 83 per cent of the trackage transferred. In 1999, however, these corporations accounted for only about 35 per cent of the transfer activity. Most transfers during the past year were to smaller carriers or corporations with limited Canadian shortline holdings.

In contrast to the rail freight sector, the rail passenger sector has remained essentially unchanged for many years. VIA Rail continues to dominate the sector in both revenue and traffic, with about 95 per cent of passenger-related revenues (including subsidies) and about 95 per cent of total passenger-kilometres and passengers. Although it owns relatively little trackage, VIA Rail has extensive running rights, largely over CN trackage. Smaller rail passenger services are offered by BC Rail, the Algoma Central Railway, the Ontario Northland Railway and the Quebec North Shore & Labrador Railway. In addition to these services, Amtrak provides services into Montreal and Vancouver, as well as into Toronto, the latter in conjunction with VIA Rail. Great Canadian Railtour also operates a seasonal service between Vancouver, Calgary and Jasper.

## TRUCKING INDUSTRY

Trucking is a vital component for many industries in the Canadian economy. For-hire trucking activities generate significant revenues and account for many jobs within Canada. Estimates indicate that more than 300,000 people worked in the for-hire trucking industry in 1998, generating revenues of approximately \$39.2 billion.

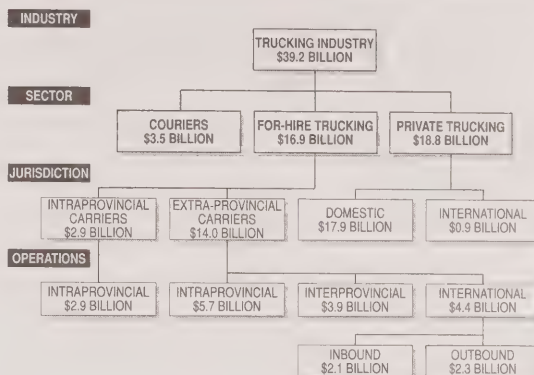
## MAJOR EVENTS IN 1999

### LEGISLATIVE AND REGULATORY

#### Proposed Amendments to the *Motor Vehicle Transport Act, 1987*

Following extensive consultations with provinces and stakeholders, the federal Minister of Transport introduced

FIGURE 11-3: TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1998



Source: Statistics Canada, Cat. 53-222-XPB, "Profile of Private Trucking in Canada".  
L.P. Tardiff Associates, Jan. 1998; "1998 Canadian Courier Market Sizing Study,"  
Infobase Marketing Inc., Oct. 1998

proposed amendments to the *Motor Vehicle Transport Act, 1987* (MVTA) in March 1999.

Although interprovincial and international truck and bus (motor carrier) operations come under federal jurisdiction in Canada, the provinces have been primarily responsible for the regulation of these carriers under the authority of the MVTA. Amendments proposed for the Act were primarily designed to allow the provinces to implement the national carrier safety compliance standard that had been developed by the federal and provincial governments in consultation with industry. Provinces are also adopting this standard in their own legislation and regulations.

The proposed amendments had not gone through the complete legislative process when Parliament prorogued in September 1999.

### Internal Trade and National Harmonization

The transportation chapter in the *Agreement on Internal Trade* calls for the complete elimination of economic regulation of trucking in Canada. At the national level, this means repealing Part III of the MVTA, which has permitted economic regulation of the intraprovincial component of extra-provincial trucking.

On August 26, 1999, the Governor General in Council approved an order establishing January 1, 2000, as the date for repeal of Part III of the MVTA<sup>3</sup>. As of this date, trucking is no longer subject to economic controls, such as economic entry controls and tariff regulations, in any part of Canada.

3 Order In Council Number P.C./C.P. 1999-1469.

## Vehicle Weights and Dimensions

Vehicle weights and dimensions have a profound effect on trucking costs, productivity and competitiveness, and are a major factor in highway infrastructure costs. The interjurisdictional Task Force on Vehicle Weights and Dimensions Policy, reporting to the Council of Deputy Ministers Responsible for Transportation and Highway Safety, co-ordinates policy through collective action and acts as a forum for exchanging information on provincial initiatives.

In 1999, the Task Force developed and proposed national standards for warning signs and for marking and lighting over-dimensional vehicles and loads — that is, those that exceed normal standards and operate under special permits.

New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador, in consultation with Quebec, are developing a proposal for uniform vehicle weight and dimension regulations within Atlantic Canada, initially for use as a basis for consultation with stakeholders.

Meanwhile, Manitoba, Saskatchewan, Alberta and British Columbia have been working closely with stakeholder groups to develop a proposal to harmonize special permit requirements within western Canada for heavy haul and overweight loads and to develop common requirements for the movement of specialized equipment under permit.

## North American Free Trade Agreement (NAFTA)

NAFTA's Land Transportation Standards Subcommittee (LTSS) was formed to develop compatible technical standards for improving the safety and efficiency of bus, truck and rail operations, and governing the transportation of dangerous goods. The three NAFTA countries also established a Transportation Consultative Group (TCG) to address issues not related to standards, such as cross-border operations and research and development. In 1999, the group completed work on several driver standards issues for truck operations through a series of agreements on operating and medical requirements. It also continued to work toward the compatibility of vehicle, driver and operator standards, with discussions focusing on such issues as vehicle dimension safety performance criteria, log books to record driver hours of service, and motor carrier supervision.

## INDUSTRY EVENTS

As in previous years, 1999 had its share of mergers and acquisitions of motor carriers. Examples involving some of the larger Canadian carriers include:

- **Mullen Transportation** of Alberta purchased the remaining 60 per cent interest in Ontario-based Mill

Creek, which specialized in general freight to major centres in Canada, the US and Mexico. (January)

- **Contrans Corporation**, through its subsidiary Laidlaw Carriers, purchased Steel City Carriers, the trucking business of RailAmerica Inc., based in Florida. Both parties agreed to pursue rail-truck intermodal opportunities throughout North America. (January)
- **H&R Transport Limited**, a Canadian carrier in the refrigerated freight business, acquired C.H. Dredge & Co. of Salt Lake City. The combined business will operate approximately 530 tractors and 700 trailers throughout the Canada and the US. With a larger fleet, the company expects to lower the cost of equipment and fuel, and operate more efficiently by reducing the number of empty backhauls. (March)
- **Trimac Transportation** of Calgary acquired an 80 per cent interest in Amer-Liquid Transport of Brownsville, Texas, expanding its operations between the US and Mexico. Trimac has engaged in crossborder operations since 1993 under an interline arrangement with Intermex, a Mexican tank-truck carrier. (July)
- **Trimac Transportation** acquired three Nova Scotia-based operations and one Newfoundland-based operation to further expand its business in Atlantic Canada. These include Sullivan Fuels Bulk Hauling Division of Sydney, Nova Scotia; Gateway Fuels Bulk Hauling Division of Yarmouth, Nova Scotia; Roadmaster Transport's Container Transport Division of Dartmouth, Nova Scotia; and J&L Trucking of Botwood, Newfoundland. (September)
- **Trimac Transportation** agreed to buy Initial DSI Transports of Houston for \$68.3 million, further consolidating the tank-truck segment of the industry. DSI bulk products, had revenues of \$156.2 million in 1998. The company has 34 terminals, mostly in the Gulf Coast, Southeast and mid-Atlantic regions, and operates a fleet of more than 900 tractors and 1,350 trailers. (December)

In transborder operations, besides mergers and acquisitions of US-based carriers, Canadian carriers use partnerships with US-based carriers to penetrate the US market. These alliances not only expand the carriers' market, they redesign the way carriers do business by allowing them to offer such services as overnight, next-day and second-day delivery over a much broader territory. In addition, such alliances can lead to the integration of the carriers' information systems and the sharing of invoicing and inventory control systems. There were numerous mergers, acquisitions and alliances of carriers on both sides of the Canada-US border in 1999. Some examples include:



- **Trimac Transportation** and four other bulk trucking companies — Groendyke Transport Inc., Manfredi Motor Transit Co., Superior Carriers Inc. and Miller Transporters — entered into a pooling arrangement of load matching and capacity sharing. Member companies have combined annual revenues of approximately \$1.1 billion. (February)
- **North American Van Lines** and **Allied Van Lines** completed a \$450 million merger. A new holding company known as Allied Worldwide, operating in 36 countries with more than 1,100 agents, expects to have annual revenues of more than \$2 billion. The company will operate North American Van Lines and Allied Van Lines in the United States and Canada; Pickfords in the United Kingdom; and Allied Pickfords in Europe, Australia, New Zealand and Asia. (November)

## CHARACTERISTICS OF THE TRUCKING INDUSTRY

More than 13,200 freight carriers comprise the highly diversified trucking industry. This number does not include small for-hire carriers earning less than \$25,000 in revenues, small private carriers incurring less than \$1 million in expenses, or owner-operators.

These 13,200 carriers include approximately 10,300 for-hire carriers with annual revenues exceeding \$25,000, 450 private carriers with annual operating expenses exceeding \$1 million, and 2,400 courier companies. Another 40,000 owner-operators with annual revenues exceeding \$25,000 contract services to either private or for-hire carriers or operate independently. These figures do not include small for-hire and small private carriers, or organizations such as farms, utility companies and municipalities that own and operate trucks.

Trucking firms differ from each other in a number of ways:

- **Size** — Companies range from single-unit owner-operators to large firms operating thousands of power units.
- **Equipment** — Some carriers use specialized equipment, such as logging trucks, hopper-bottom grain trailers or cement mixers; others use general-purpose vans or flatdeck trailers.
- **Geographic coverage** — Intraprovincial carriers operate locally within a province; interprovincial carriers operate across provincial boundaries; international carriers move shipments into the US.
- **Type of services** — Some carriers provide truckload service (full load/single shipper); others provide

less-than-truckload service (multiple shipments from multiple shippers); others haul containers as part of intermodal operations.

- **Alliances** — Some carriers handle general freight in one region, while others interline with carriers in other regions, even other countries.

The trucking industry comprises two major components: for-hire trucking and private trucking. For-hire trucking companies offer transportation services for compensation, providing either truckload (TL) or less-than-truckload (LTL) services (or a mix of the two) in domestic or international markets. For-hire trucking firms can be further categorized into market segments according to the types of freight carried, notably the following:

- *General Freight carriers* handle many different types of freight in vans and general-freight trailers.
- *Household Goods carriers* use specialized trailers to transport furniture and other personal household possessions.
- *Liquid Bulk carriers* use tanker trucks to transport liquids such as petroleum, milk and chemicals.
- *Dry Bulk carriers* use dump or hopper-bottom trailers to haul goods such as grain, fertilizer and gravel.
- *Forest Products carriers* use special logging trucks to transport logs from the forest to the mill.
- *Other Specialized Freight carriers* include auto haulers using special trailers to transport cars and trucks from production plants to dealerships, and couriers that use a variety of types of trucks to transport small parcels and mail.

General freight carriers dominate the for-hire sector, accounting for almost 60 per cent of for-hire revenues in 1998. Table 11-2 compares the revenues of for-hire trucking firms according to the types of freight carried for 1998.

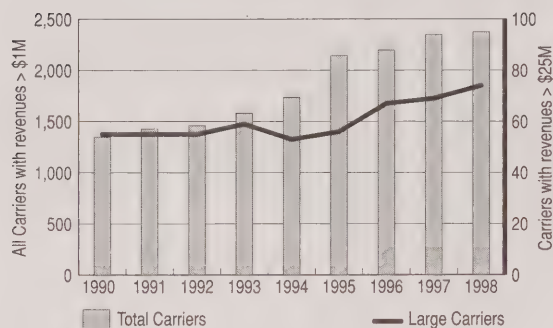
TABLE 11-2: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1998

	Revenue (Millions of dollars)	Per cent of total
General Freight	8,902.0	59.8
Household Goods	454.8	3.1
Liquid Bulk	1,069.6	7.2
Dry Bulk	1,091.8	7.3
Forest Products	721.4	4.8
Other Specialty Freight	2,648.8	17.8
Total	14,888.4	100.0

Source: Statistics Canada, Annual Supplement (Q5) to the Quarterly Motor Carrier Freight Survey

Figure 11-4 presents the number of for-hire carriers earning annual revenues of \$1 million or more between 1990 and 1998. The total number of for-hire carriers has



**FIGURE 11-4: NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF \$1 MILLION OR MORE, 1990 – 1998**

Sources: Statistics Canada, *Annual For-Hire Carriers Survey, 1990–1993; Annual Supplement (Q5) and the Quarterly Motor Carrier Freight Survey, 1994–1998*

increased steadily since 1990, with a major increase in 1995. Overall, the number of carriers increased over the 1990 to 1998 period. However, this increase partly reflects a new survey frame used by Statistics Canada in its trucking survey.

The number of very large carriers (carriers earning more than \$25 million in revenues annually) has fluctuated between 55 and 75 firms over this period.

Table 11-3 shows the percentage share of total for-hire revenues for each size of carrier from 1991 to 1998.

Revenues generated by carriers earning more than \$25 million steadily decreased as a percentage of total industry revenues between 1991 and 1995, while the actual number of carriers in this category remained relatively stable. This suggests an increased level of concentration faced by this segment of the industry. The proportion of their revenues to total industry revenues declined from 33 per cent in 1991 to 25.7 per cent in 1997.

Over the same period, there was an increase of ten per cent in the share of revenues generated by carriers earning between \$12 million and \$25 million.

However, in 1998, the number of carriers earning more than \$25 million increased by almost 20 per cent over 1997. This may be the result of increased merger and acquisition action by the large carriers in 1998. In turn, this could explain the decline in the number of carriers in the group earning between \$12 million and \$25 million.

The share of total industry revenues earned by carriers earning between \$1 million and \$12 million fluctuated around 40 per cent between 1991 and 1998. The small carriers earning less than \$1 million saw their share of industry revenues drop to 12.4 per cent in 1998.

Table 11-4 ranks the key Canadian-based for-hire trucking firms by the size of their fleets. It also indicates the types of services they offer.

Interprovincial and international activities, both of which are under federal jurisdiction, are often referred to as extra-provincial trucking. These activities accounted for over \$14 billion in 1998, 83 per cent of total for-hire trucking revenues. A significant part of these revenues, 40 per cent, however, were derived from intraprovincial operations.

## COURIERS

The courier industry, which transports small packages, is another important segment of the trucking industry. This type of service may provide door-to-door service or combine different transportation services, such as intercity bus, air cargo and LTL truck services.

Based on a daily average delivery of 1.5 million packages of Canadian origin weighing less than 150 pounds, a recent study<sup>4</sup> estimated that total 1998 revenues for the courier industry were \$3.5 billion.

**TABLE 11-3: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1998**

Year	Medium Carriers (\$1 – \$12 million)		Large Carriers (\$12 – \$25 million)		Top Carriers (Over \$25 million)		Small Carriers (Less than \$1 million)		Grand Total Revenue (\$ millions)
	Revenue (\$ millions)	Share (% of Total)	Revenue (\$ millions)	Share (% of Total)	Revenue (\$ millions)	Share (% of Total)	Revenue (\$ millions)	Share (% of Total)	
1991	4,028.8	40.3	1,107.6	11.1	3,298.2	33.0	1,562.4	15.6	9,997.0
1992	4,217.4	41.8	1,072.2	10.6	3,256.1	32.3	1,537.3	15.2	10,082.9
1993	4,542.9	41.0	1,268.0	11.4	3,411.1	30.8	1,868.2	16.8	11,090.2
1994	5,212.8	40.4	2,208.5	17.1	3,541.4	27.5	1,929.9	15.0	12,892.6
1995	5,460.6	38.3	3,090.0	21.7	3,576.9	25.1	2,113.4	14.8	14,240.9
1996	5,731.8	37.6	3,453.2	22.7	3,917.7	25.7	2,127.1	14.0	15,229.8
1997	6,530.4	40.1	3,553.1	21.8	4,187.7	25.7	2,019.0	12.4	16,290.2
1998	6,591.6	38.8	3,280.5	19.3	5,015.9	29.5	2,100.0	12.4	16,988.0

Sources: Transport Canada based on Statistics Canada, *Annual Motor Carriers of Freight Survey (AMCF) 1990-93; Annual Supplement (Q5) to the Quarterly Motor Carriers of Freight Survey (QMCF) 1994-98; 1998 small carriers' revenues estimated by Transport Canada*

4 1998 Canadian Courier Market Sizing Study, Infobase Marketing Inc., October 1998.

TABLE 11-4: MAJOR FOR-HIRE CARRIERS BY SECTOR - 1999

Total Vehicles	Name of Carrier	Province	Sector
4,359	Trimac Transportation Services	AB	TL,B,R,O
3,530	Mullen Transportation	AB	LTL, TL,B,O
3,307	Clarke Inc.	ON	LTL,TL,C,H,R
3,071	J.D. Irving Ltd.	NB	LTL, TL,B,C,R,O
3,058	Transx	MN	TL,R
3,040	Schneider National Carriers Canada	ON	TL,B,O
2,950	Robert Transportation	PQ	LTL,TL,B,C,
2,879	Contrans	ON	LTL,TL,B,C,R,O
2,727	SLH	ON	TL,TL
2,677	Westminster Holdings	ON	LTL,TL,C,O
2,462	Paul's Hauling	AB	TL,TL,B,R,O
2,416	Day & Ross Transportation Group	NB	TL,LTL,R,O
2,400	Reimer Express Lines (Roadway)	MN	LTL,TL,C,R,O
2,338	Cabano Kingsway	PQ	LTL,TL,B,C
2,302	Highland Transport (Westminster)	ON	TL,C
2,194	Kindersley Transport	SK	LTL,TL,R,O
2,172	Armour Transportation System	NB	LTL,TL,B,C,R,O
2,137	Tri-Line Freight Systems	AB	LTL,TL,R,O
2,128	Auto Haulaway	ON	O
2,108	Allied Systems Canada	ON	O
2,075	TST Solutions	ON	LTL,TL,O
2,035	Tri-Line Freight Systems	AB	LTL,TL,R,O
2,030	TNT Logistics	ON	LTL,TL,H,O
1,900	Canadian Freightways Group	AB	LTL,TL
1,802	Laidlaw Carriers (Contrans)	ON	TL,B,O
1,821	Challenger Motor Freight	ON	LTL,TL,C,O
1,731	Arnold Bros. Transport	MN	TL,C,R
1,710	Challenger Motor Freight	ON	LTL,TL,C,O
1,705	FTI Inc. Canada	ON	TL
1,664	TCT Logistics	AB	LTL,TL,C,R
1,604	Vitran Corp.	ON	LTL,TL,C
1,570	Midland Transport (Irving)	NB	LTL,TL,C,R,O
1,556	Wilson's Truck Lines	ON	TL
1,518	Groupe Papineau (Cabano)	PQ	LTL,TL,C,R
1,461	BLM Group Inc.	ON	LTL,TL,H,O
1,412	SGT 2000	PQ	TL,C,O
1,400	XTL Transport	ON	TL
1,374	Landtran Systems	AB	LTL,TL,R
1,368	Bruce R. Smith Ltd.	ON	TL,R
1,360	Gerth Transport	ON	LTL,TL
1,331	Canada Cartage System	ON	LTL,TL,B,O
1,322	Yankee Group	SK	TL,C,H,O
1,313	Cooney Group	ON	TL,B,O
1,300	Kleysen Transport	MN	TL,B,C,R,O
1,255	Bison Transport	MN	TL,H,R
1,227	Manitobulin Transport Group	ON	LTL,TL,B,C,H,R
1,219	Erb Group of Companies	ON	LTL,TL,R
1,173	Verspeeten Cartage	ON	TL
1,160	Canadian American Transportation	PQ	TL,B,C,O
1,160	Guilbault Transport Group	PQ	LTL,TL
1,130	Mackie Moving Systems	ON	TL,C,H,O
1,129	Thibodeau Transport Group	PQ	LTL,TL,C
1,110	Quik X Transportation	ON	LTL,TL,R
1,105	Purolator Courier	ON	LTL,O
1,077	Brookville Transport (Contrans)	NB	TL,R,O
1,066	Hunterline Group	BC	TL
1,049	Mullen Trucking (Mullen Transportation)	AB	LTL,B,C,R,O
1,031	Sundbury Transport (J.D. Irving)	NB	TL,B,C,R,O
1,022	Penner International	MN	LTL,TL

Sector Legend:  
 LTL = Less than Truckload; TL = Truckload; B = Dry or Liquid Bulk; C = Container;  
 H = Household Goods; R = Agricultural or Refrigerated; O = Other  
 Total Vehicles = include trucks, tractors and trailers, including owner-operator equipment,  
 domiciled in Canada.

Source: Today's Trucking, March 1999, "The 1999 Top 100 for-Hire Fleets"

The industry carries letters, envelopes, pouches, boxes and cartons from Canada to destinations anywhere in the world. The domestic lane, shipments that originate and are delivered to locations in Canada, accounts for the majority of courier business in Canada — 95 per cent of total volume and 81 per cent of total revenue in 1998.

Nine carriers account for approximately 80 per cent of all courier traffic and revenues: Canada Post, Canpar, Federal Express, Loomis, Purolator, RPS, TNT Express Worldwide and United Parcel Service.

## PRIVATE TRUCKING

Private trucking activities are conducted by companies, such as retailers or manufacturers, who haul their own goods. Typically, companies are involved in private trucking as they have a need to control service. Their fleet costs are comparable with or lower than those of for-hire carriers, and the visibility they receive from using their own trucks is considered to be a positive factor. In dollar terms, the for-hire sector and the private trucking sector are approximately of the same size.

According to one recent study,<sup>5</sup> private trucking services were valued at almost \$19 billion annually. Private trucking dominates the movement of freight within Canada's urban areas, accounting for approximately 85 per cent of truck movements. For the most part, private trucking fleets comprise straight trucks and cube vans used for pick-up and delivery services to local businesses. While little information exists on the urban segment of private trucking, it is estimated to be valued in the order of a \$12 billion a year.

When they run long hauls with tractor-trailers, private carriers may also obtain authority to haul goods for others. Under these circumstances, they in effect compete with for-hire trucking firms.

Private fleets, an integral part of a company's distribution network, provide a logistical support service to the companies that own them. These companies tend to be retail distributors for consumer goods, chemical products producers, pulp and paper companies, beverage distributors, and wholesale distributors of agricultural products.

Among the companies that operate substantial intercity fleets are Canadian Tire, Labatts, Molson, Home Hardware, Liquid Air, Kraft General Foods, Loblaw's, 3M, Ault, Brewers Retail, Consumers Distributing, DuPont, Dominion Textiles, General Electric, K-Mart and Tim Horton Donuts.

The international, interprovincial and intraprovincial value of private trucking is calculated by means of the

5 L.P. Tardif Associates, "Profile of Private Trucking in Canada," January 1998.

market share percentages established by the 1991 and 1995 CCMTA Roadside Surveys. However, the methodology focuses on longer distance trips; as a result, shorter distance trips, where private trucking is more dominant, may be under-represented.

Private trucking accounted for 41 per cent of intraprovincial trips, for an estimated value of almost \$5 billion. Straight trucks were used for 44 per cent of these longer trips and tractor-trailers for 48 per cent. Shipments between Ontario and Quebec accounted for 76 per cent of intraprovincial private trucking in Canada.

Overall, private trucking accounted for 22 per cent of interprovincial trips and 28 per cent of international trips. The value of private trucking is estimated at approximately \$1 million for each of these sectors. Private truckers are far more likely than for-hire truckers to use straight trucks for these movements.

In 1998, Statistics Canada surveyed 396 private trucking companies each with at least \$1 million in operating expenses. Almost three quarters of these carriers were from Ontario and Quebec. Total operating expenses of these carriers, which were at \$1.7 billion in 1997, reached \$1.5 billion in 1998, the lowest level since 1990.

## OWNER-OPERATORS

Owner-operators work under contract for either for-hire or private carriers, typically using their own tractors. Of the more than 40,000 owner-operators in Canada in 1997, almost half were under contract to carriers based in Ontario and Quebec and a further one third were concentrated in Alberta and British Columbia. More than 70 per cent of the owner-operators are under contract to for-hire carriers.

Table 11-5 presents the number of owner-operators under contract by carrier type, as well as revenues by province for 1997.

**TABLE 11-5: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIER, 1997**

	For-hire Carriers	Private Carriers	Both	Total	Revenues (\$millions)
Newfoundland	238	90	46	374	64.6
Prince Edward Island	104	27	20	151	25.9
Nova Scotia	713	200	126	1,039	160.5
New Brunswick	1,216	299	187	1,702	265.1
Quebec	5,719	1,138	302	7,159	1,095.7
Ontario	9,700	2,985	768	13,453	1,658.9
Manitoba	1,352	420	229	2,001	291.5
Saskatchewan	1,287	443	173	1,903	286.9
Alberta	4,154	1,402	808	6,364	1,074.4
British Columbia	4,060	1,238	683	5,981	882.5
Yukon	39	14	6	59	10.3
Northwest Territories	24	12	0	36	6.2
Canada	28,606	8,268	3,348	40,222	5,822.4

Source: Statistics Canada, Annual Motor Carrier Freight Survey, Surface and Marine, Bulletin, Vol. 15 No. 1, Cat. 50-002

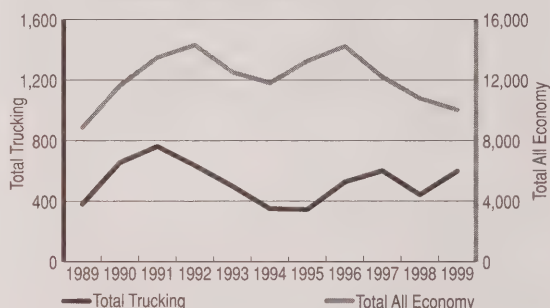
## BANKRUPTCIES

Bankruptcies are about as common in the trucking industry as in the general economy, though there are some lags in the data. Trucking bankruptcies dropped rapidly between 1991 and 1994, stabilized in 1995, then increased in 1996 and 1997. Following a decline in 1998, they increased again in 1999. Preliminary estimates for 1999 are based on the number of bankruptcies between January and September.

Bankruptcies and other departures from the trucking industry do not have a significant effect on the provision of freight services. The majority of truck bankruptcies involve small operators, with one or two trucks, or companies that provide services ancillary to trucking.

Figure 11-5 compares the number of bankruptcies in the trucking industry with those in the Canadian economy from 1989 to 1999.

**FIGURE 11-5: NUMBER OF BANKRUPTCIES, TRUCKING vs TOTAL ECONOMY, 1989 - 1999<sup>1</sup>**



Source: Industry Canada, Office of the Superintendent of Bankruptcy

Table 11-6 shows the number of trucking bankruptcies by region between 1987 and 1999.

**TABLE 11-6: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1987 - 1999<sup>1</sup>**

	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia and Territories	Total Trucking	Total Economy
1989	27	65	58	143	88	381	8,864
1990	57	142	147	213	97	656	11,642
1991	98	107	191	223	143	762	13,496
1992	70	119	188	171	88	636	14,317
1993	70	91	152	130	56	499	12,527
1994	37	67	88	125	33	350	11,810
1995	31	81	58	141	34	345	13,258
1996	74	90	107	197	59	527	14,229
1997	82	119	164	178	58	601	12,200
1998	39	71	121	158	54	443	10,791
1999	46	104	143	249	56	598	10,026

Note: "Truck Transport Industries" include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy



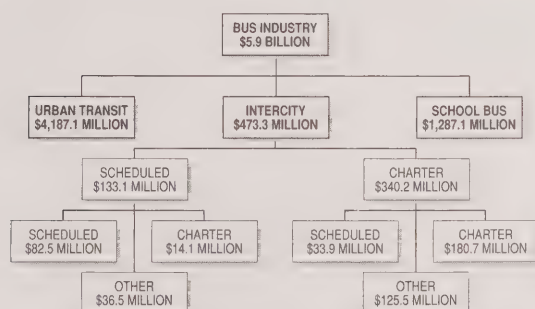
## BUS TRANSPORTATION INDUSTRY

The Canadian bus industry includes three main business lines: intercity bus services, urban transit services and school bus services. Intercity bus services can be further broken down into scheduled and charter services. Charter services include airport shuttle services, services offered under contract, sightseeing services (urban or interurban), and convention services. Canadian bus transportation companies very seldom offer only one type of bus service. More often than not, they offer more services in an attempt to maximize the revenue-generating activities of their bus fleet.

For the purposes of classification, each firm has been listed under the line of business that generates more than half of its revenues.

Figure 11-6 shows the industry structure and revenues of the bus industry in Canada in 1998. This data includes almost \$2.4 billion in operating and capital subsidies to urban transit operators. Table 11-7 summarizes revenues by sources of revenue for the same year.

FIGURE 11-6: BUS INDUSTRY STRUCTURE AND REVENUES, 1998



Source: Statistics Canada, Cat. 53-215-X1B

The Canadian bus industry experienced an overall 10.1 per cent increase in revenues (excluding urban transit subsidies) between 1995 and 1998. Within the different sectors, reported revenues were subject to variations during that period. They were caused, in part, by consolidated financial reporting resulting from mergers and acquisitions, as well as by a new industrial classification system implemented by Statistics Canada — North American Industry Classification System (NAICS).<sup>6</sup>

TABLE 11-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1998

	Intercity bus operators	Charter <sup>1</sup> bus operators	School bus operators	Urban transit operators	Total
Number of establishments	31	160	819	100	1,110
Sources of revenues	(Millions of dollars)				
Scheduled intercity services	82.5	33.9	123.7		240.1
Charters, sightseeing and shuttle services	14.6	222.8	126.0		363.4
School bus transportation	4.0	16.4	871.3		891.6
Urban transit services	2.5	7.9	35.3	1,671.2	1,716.9
Other passenger/ operating revenue	14.6	54.9	58.4	134.8	262.6
Parcels express	10.8	3.9	71.9		86.6
Subsidies <sup>2</sup>	4.2	0.3	0.5	2,381.1	2,386.2
Total	133.1	340.2	1,287.1	4,187.1	5,947.5

1 Consists of charter, shuttle and sightseeing services.

2 Includes operating and capital subsidies for urban transit operators.

Source: Statistics Canada, Cat. 53-215-XPB, Passenger Bus and Urban Transit Statistics - 1998

Table 11-8 shows the total revenues of the bus industry, by sector, for the 1995 – 1998 period. It also shows the percentage change in revenues from 1995 to 1998.

TABLE 11-8: TOTAL REVENUES BY INDUSTRY SECTOR, 1995 – 1998

Year	1995	1996	1997	1998	Per cent change 1995 – 1998
Scheduled Intercity	331.9	315.0	303.7	133.1	(59.9)
Charter	275.8	284.3	289.9	340.2	23.4
School	1,055.2	1,032.6	1,023.6	1,287.1	22.0
Urban (less subsidies)	1,576.2	1,651.9	1,759.1	1,806.0	14.6
Sub-total	3,239.1	3,283.8	3,376.3	3,566.4	10.1
Urban Transit Subsidies	2,034.5	2,054.8	2,133.8	2,381.1	
Total	5,273.6	5,338.6	5,510.1	5,947.5	12.8

Source: Statistics Canada, Cat. 53-215-X1B

## MAJOR BUS EVENTS IN 1999

### LEGISLATIVE AND REGULATORY CHANGES

#### Review of the Motor Vehicle Transport Act, 1987

In March 1999, the Minister proposed amendments to the federal *Motor Vehicle Transport Act* 1987, including deregulation of the extra-provincial bus industry through a two-stage process. In the first stage, the proposed amendments would deregulate interprovincial and international bus services; in the second stage, all bus services would be deregulated.

6 This uniform standardized classification system for industries in North America was developed by Canada, the US and Mexico as part of the 1995 North American Free Trade Agreement. NAICS has replaced the Standard Industrial Classification system used previously by Statistics Canada. The bus transportation industries covered under NAICS include urban transit systems, inter-urban and rural bus transportation, school bus transportation, the charter bus industry, shuttle services, and scenic and sightseeing transportation by bus.



This proposal followed several years of discussions with the provinces and industry stakeholders on the future of bus regulation in Canada. The MVTA allows each province and territory to decide whether to apply economic controls to extra-provincial bus carriers operating to and from its jurisdiction even though these carriers fall under federal jurisdiction. The federal government's position has always been to seek a consensus of government and industry in making changes to the MVTA.

In September 1999, the Minister announced that, in the absence of consensus on the future of extra-provincial bus regulation in Canada, he would not proceed with proposed amendments to deregulate the bus industry. Instead, he would refer the issue of bus regulation in Canada to a Parliamentary committee for examination.

## INDUSTRY EVENTS

Some members of the Canadian bus industry have been quite proactive in leading the trend, noticeable in North America and elsewhere, toward consolidation in bus operations.

In March 1999, the shareholders of Greyhound Lines Inc. of Dallas, Texas, approved a merger with Laidlaw Inc. of Burlington, Ontario. As Laidlaw already owned Greyhound Canada and several other Canadian intercity bus operations, it thus became the largest intercity bus operator in North America. Laidlaw's school bus operations, however, continue to yield the majority of its operating revenues.

In June 1999, Stagecoach Holdings Inc. of Perth, Scotland, took control of Coach USA, of Houston, Texas, through a merger agreement. Coach USA included three Canadian bus operations: Trentway-Wagar (Peterborough, Ontario), Autocar Connaisseur (Montreal) and Erie Coach (London, Ontario).

## BUS SERVICES

### INTERCITY BUS SERVICE

While intercity bus services account for the bulk of long-distance bus transportation, they represent the smallest segment of the industry in terms of revenues. Intercity services can be sub-divided into scheduled intercity operations and charter services. Charter services include airport, sightseeing and tour services. Most of the large carriers offering scheduled intercity bus services also do charter business.

Intercity services exclusively within a province come under provincial responsibility. Most school bus and urban transit operators in Canada fall into this category. Intercity carriers that operate some interprovincial or international services come under federal jurisdiction. Under the MVTA, responsibility for regulating the operations of extra-provincial bus companies is delegated to the provinces.

The industry's high degree of diversification makes it difficult to accurately ascertain the size of the labour force in intercity and charter bus services. In 1998, intercity scheduled and charter activities employed just under 5,000 employees. However, a significant number of employees in school bus operations also worked in intercity or charter bus transportation activities. An estimated 4,000 motor coaches were used in intercity and charter service in Canada in 1999, compared with the 73,000 buses of all kinds registered in 1999 across Canada in all provincial and territorial jurisdictions. Of this total, school buses represented a significant proportion of registered buses.

### CHARTER OPERATORS

Charter bus service usually refers to a bus trip by a group of passengers who all embark and disembark at the same point. The charter operator is generally granted the right to operate trips out of a given location or city with open-ended access to destinations. Operators may offer a broad range of services, such as half-day school trips, three-week excursions, one-way trips and local sightseeing tours.

Charter bus companies earned almost two thirds of their revenues from charter services. Like scheduled intercity carriers, charter carriers generated a significant portion of revenues from other services, including 11 per cent from intercity services and 16 per cent from other passenger services, such as sightseeing, shuttle and transit services.

### URBAN TRANSIT

Urban transit services in major Canadian cities and metropolitan areas operated more than 11,000 buses in 1999, including more than 10,000 large buses. The largest urban transit systems are in Canada's largest urban centres, with services offered over a metropolitan area. These large systems are in Toronto, Montreal, Calgary, Ottawa, Edmonton, Winnipeg, Vancouver and Quebec City. Compared to the urban transit systems in these large Canadian centres, all other urban transit services are relatively small in both size and scope of services. Appendix 11-2 lists some important urban transit systems in Canada in 1999. The list is broken down by province and territory.

Urban transit services account for the largest share of the total revenues generated by bus service operations in Canada: 51 per cent in 1998. When subsidies from municipal and provincial governments are included, urban transit services accounted for more than 70 per cent of total bus revenues. Some transit operators also offer school bus services, charter services and accessible services to travellers with disabilities.

## MARINE TRANSPORTATION INDUSTRY

Canada's marine industry includes a fleet of Canadian flag operators providing domestic and transborder shipping services. International trade is served largely by foreign flag operators calling at Canada's major ports. In recent years, there have been major policy reforms in the marine sector, and 1999 was no exception. The year was marked by a number of important events, as well as progress on some significant legislative changes.

### MAJOR MARINE EVENTS IN 1999

#### LEGISLATIVE AND REGULATORY CHANGES AND INITIATIVES

##### **Amendment to the *Canada Shipping Act* (Bill S-4), 1998**

Bill S-4, *An Act to amend the Canada Shipping Act*, was implemented in Chapter 6 of the Statutes of Canada 1998. Provisions of Bill S-4, which relate to claims for oil pollution damage, were brought into force by an Order-in-Council on May 29, 1999. This was 12 months from the date on which Canada deposited with the International Maritime Organization its instrument of accession to the 1992 Protocols to the 1969 International Convention on Civil Liability for Oil Pollution Damage, and to the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage.

##### **Review of the *Carriage of Goods By Water Act* (COGWA)**

On December 10, 1999, pursuant to a legal requirement contained in the *Carriage of Goods by Water Act* (1993), the Minister of Transport submitted a Report to Parliament on the review of the Act. The report concluded, based on consultations with industry and provinces, that the Hague/Visby Rules should be retained in the COGWA until the end of the next review period (January 1, 2005).

### ***Shipping Conferences Exemption Act, 1987* (SCEA)**

During 1999, Transport Canada initiated consultations with stakeholders on the *Shipping Conferences Exemption Act, 1987* (SCEA) to determine whether the legislation continues to support Canada's goals of promoting international trade and ensuring Canadian shippers have access to adequate international ocean shipping services at reasonable cost.

SCEA exempts certain practices of shipping conferences from the provisions of the *Competition Act*. A shipping conference is an association of liner companies operating under an agreement to provide service on common routes based upon agreed rates and terms of service. Under SCEA, shipping conferences can set ocean freight rates and services collectively, provided that the rates are published in a tariff filed with the Canadian Transportation Agency (CTA) and their conference agreement has been similarly filed.

To promote intra-conference competition and provide shippers with additional options, including pricing options, the Act incorporates provisions for confidential "service contracts" and independent action by individual conference members. The legislation is consistent with that of Canada's major trading partners.

The Act also provides for the Minister of Transport to designate a shippers group to represent the interests of shippers. The Canadian Shippers' Council (CSC) has been so designated. Under the Act, shipping conferences are required to meet with the designated shippers group when requested to do so and are to provide information for the satisfactory conduct of a meeting. It is normal practice that the CSC meet with tariff filing conferences to discuss the conferences' proposed business plans, as well as their rates, surcharges and ancillary charges.

#### ***Canada Marine Act: Implementation Status***

The *Canada Marine Act* (CMA), which received Royal Assent on June 11, 1998, created a National Ports System made up of independently managed Canada Port Authorities (CPAs). To date, 17 of the 18 ports designated to become CPAs have received their CPA status and have established boards of directors. The implementation dates were presented in Chapter 10, *Transportation Infrastructure*.

A CPA for the Port of Hamilton, the last remaining designated CPA, will be established when the letters patent process is completed. In addition to these original 18 ports, applications for CPA status from two other ports, Belledune and Oshawa were received. Letters patent are under development for the Ports of Belledune and Oshawa.

The Canada Ports Corporation (CPC) has been kept open during the implementation phase of the National Ports System to ensure that all ports have been either transferred to CPA status or divested to local interests. Ridley Terminals, for its part, will become a parent Crown corporation reporting to the Minister of Transport, upon the winding up of the CPC. Over the longer term, the government intends to divest itself of Ridley Terminals when the time is appropriate.

The sections of the *Canada Marine Act* dealing with pilotage and the commercialization of the St. Lawrence Seaway came into force during 1998. For more details, see Chapter 10, Transportation Infrastructure.

### Ports Task Force

On June 22, 1999, the Minister of Transport announced the formation of a Ports Task Force to move forward with Justice Willard Estey's vision for a more commercially oriented, contract-based grain handling and transportation system. Headed by the Deputy Minister of Transport, the Task Force studied issues of strategic importance to the ports of Churchill, Prince Rupert, Vancouver and Thunder Bay, as well as to other stakeholders with marine interests affected by the transportation and handling of grain.

The Task Force ran parallel with, and complemented, the work of Mr. Arthur Kroeger, who was appointed by the Minister of Transport to seek consensus among system participants on the changes necessary to implement the grain transportation reform framework set out by Justice Estey.

During cross-Canada meetings, stakeholders consistently stressed the importance of retaining market discipline and commercial principles in addressing port grain transportation and handling issues. In general, they were reluctant to consider quotas, traffic commitments, or measures that could distort the commercial basis of grain movement. On the other hand, confronted with low international commodity prices, many insisted on containing the various costs of doing business, including the cost of federal marine services.

The Ports Task Force Report summarizes the positions of major stakeholders and presents key findings on the issues raised. It was provided to the Minister of Transport in late September 1999 and is now publicly available.

## INDUSTRY EVENTS

### INTERNATIONAL

There were a number of important events in the international marine sector in 1999.

- Three container lines (Zim, the China Ocean Shipping Company and Norasia) made Vancouver their first port of call inbound from the Far East. CN and CP Rail provide dedicated double-stack rail services to move containers to inland destinations in Canada and the US.
- The Port of Vancouver was hit by two work stoppages — a truckers' strike in the summer and a lockout of longshoremen in November. Despite this, the port announced in early December that it would still handle a record one million TEUs (Twenty-foot Equivalent Units) in 1999.
- There was a surge of new entrants into the transpacific liner trades, reflecting improved rates and traffic levels. These included such lines as: Norasia, FESCO, the Mediterranean Shipping Company, Trans-Pacific Line, Great Western Steamship Company and CMA/CGM. In addition, two other lines, Zim and Evergreen, each added a new string of vessels to their existing services.
- The *US Ocean Shipping Reform Act* of 1998 came into force on May 1, 1999. It grants the right of confidential contracting between individual conference lines and shippers.
- Transpacific Westbound Rate agreement (TWRA) and Asia North America Eastbound Rate Agreement (ANERA) — the main shipping conferences on the US transpacific routes — were dissolved in the spring of 1999, partly in reaction to the new US ocean shipping reform legislation. The Canada Westbound Rate Agreement was also dissolved at this time.
- Maersk Inc. and Sea-Land Services Inc. announced their decision to stay with New York/New Jersey as their main load centre port on the east coast of North America. The ports of Halifax and Baltimore were runners up in the competition.
- Following Sea-Land's departure from the joint service in April 1999, NYK (Nippon Yusen Kaisha) announced that it would join the joint service offered by Maersk and P&O Nedlloyd Ltd. between Montreal and Europe.
- The Wallenius and Wilhelmsen lines announced the formation of a joint operating company to handle their car-carrying and Ro-Ro shipping activities.
- Maersk acquired the international liner services of Sea-Land, its current operating partner in worldwide liner operations.



## DOMESTIC

- Algoma Central Corporation increased the size of its tanker fleet with the purchase of the main operating companies and certain assets of the EnerChem Group, including three Canadian-registered tankers.
- Canada Steamship Lines took delivery of the CSL *Niagara*, the first vessel to receive a new forebody in a planned series of three. The hull replacement program is expected to cost about \$100 million.
- Groupe Desgagnés registered a new oil tanker, constructed in China, under the Canadian flag. This is the first brand new ship to be added to the eastern Canadian bulk fleet since the mid-1980s.

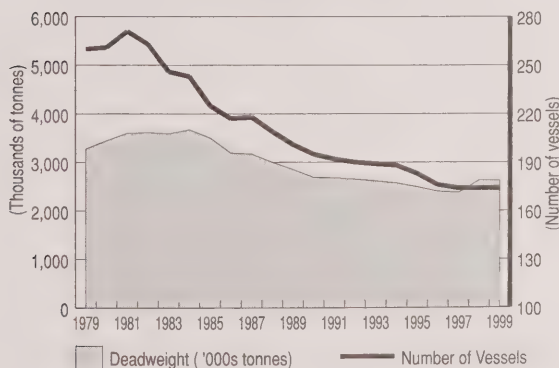
## MARINE FREIGHT TRANSPORT SERVICES

### DOMESTIC SERVICES

From 1979 to 1999, the Canadian merchant fleet (defined here as self-propelled vessels of 1000 gross tons and over) went from 3.3 million to 2.6 million deadweight tonnes, losing on average one per cent of its carrying capacity each year. In terms of vessels, the number of ships decreased from 260 to 174 over the period.

In terms of carrying capacity (deadweight), the peak was reached in 1984 with 3.7 million deadweight tonnes and the low in 1997 at 2.4 million tonnes. Figure 11-7 shows the evolution of the Canadian registered fleet from 1979 to 1999.

**FIGURE 11-7: CANADIAN REGISTERED FLEET,<sup>1</sup> 1979 – 1999**  
(Ships of 1,000 gross tons and over)



Note: Deadweight tonnage of vessel carrying capacity in metric tonnes.  
1 Including self-propelled vessels of 1,000 gross tons and over.

Source: Canadian Transportation Agency and Transport Canada

From 1979 to 1999, dry bulk carriers have formed the backbone of the Canadian merchant fleet, although their share of total deadweight tonnage went from 84 to 74 per cent over the period. Their number decreased from 134 to 72 units over the period. At the opposite, tankers' share of total deadweight tonnage moved from 9 to 19 per cent, although their number diminished from 36 to 21 vessels.

Table 11-9 reveals the transport capacity of the Canadian registered fleet, by type of vessel.

**TABLE 11-9: CANADIAN REGISTERED FLEET<sup>1</sup> BY TYPE, 1979 – 1999**

Type of Carriers	Deadweight ('000s tonnes)			Number of Vessels		
	1979	1989	1999	1979	1989	1999
Dry Bulk	2,747	2,260	1,943	134	85	72
Tankers	300	384	491	36	33	21
General cargo	149	103	86	30	18	17
Ferries	71	68	70	52	55	56
Other	7	39	33	8	10	8
<b>Total</b>	<b>3,274</b>	<b>2,854</b>	<b>2,624</b>	<b>260</b>	<b>201</b>	<b>174</b>

1 Self-propelled vessels of 1,000 gross tons and over.

Source: Canadian Transportation Agency and Transport Canada

### Eastern Canada

Table 11-10 provides information on vessel type, gross registered tonnage (GRT), area of operation and type of service for companies operating Canadian-flag cargo vessels of 1,000 GRT or above in eastern Canada. Algoma Central Corporation, Upper Lakes Group and Canada Steamship Lines are the three largest operators in the area. Algoma Central, with 28 per cent of eastern Canada's fleet capacity, is the largest inland shipping company in Canada.

Traditionally, Algoma Central operated in the dry bulk trades. In 1998, however, it bought five tankers from Imperial Oil Ltd., the Canadian subsidiary of Exxon Corp. In January 1999, Algoma Central increased the size of its tanker fleet with the purchase of the main operating companies and certain assets of the EnerChem Group, including three Canadian registered tankers. The sale included a part interest in two US-flag tankers as well.

### Western Canada

Domestic marine freight services on the West Coast are provided by a large fleet of tugs and barges. (Unfortunately, there is no fleet list available by company that provides GRT for tugs and barges.) While most of the operators concentrate on domestic trade, some also trade internationally between Canadian and US ports. The West Coast also has a significant fleet of ferry vessels that provide links to coastal and island communities.



TABLE 11-10: EAST COAST CANADIAN-FLAG CARGO FLEET – 1,000 GRT AND OVER, 1999

<i>Companies</i>	<i>Type</i>	<i>Number of vessels</i>	<i>GRT</i>	<i>Area of Operation</i>	<i>Type of Service</i>
Algoma Central Corp.	Bulker	9		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk, liquid bulk
	Self-Unloader	14		Great Lakes/St. Lawrence/East Coast Canada	
	Tanker	8		Great Lakes/Gulf of St. Lawrence/East Coast Canada	
	<b>Total</b>	<b>31</b>	<b>487,447</b>		
Black Creek Shipping Co. (See Lower Lakes also)	Self-Unloader	1	10,532	Great Lakes/St. Lawrence	Dry bulk
Canada Steamship Lines	Bulker	1		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk
	Self-Unloader	12		Great Lakes/St. Lawrence/East Coast Canada	
	<b>Total</b>	<b>13</b>	<b>291,515</b>		
Canarctic Shipping	Bulker	1	20,236	Canadian Arctic from May to November	Dry/Liquid bulk
Canship Ltd.	Other	1	1,714	East Coast	
C.A. Crosbie Shipping	Other	2	5,301	Canadian Arctic/East Coast Canada/Atlantic Basin	Container, breakbulk, Ro-Ro
ESSROC Canada	Other	1	6,792	Great Lakes	Cement
Groupe Desgagnés	Tanker	3		Great Lakes/St. Lawrence/ Arctic/Overseas	Container/breakbulk/ dry bulk/grain
	Other	6			
	<b>Total</b>	<b>9</b>	<b>61,210</b>		
Imperial Oil	Tanker	1	1,192	Great Lakes	Liquid bulk
Irving/Kent Line	Tanker	3	51,091	Maritimes	Liquid bulk
LaFarge Canada	Other	1	6,729	Great Lakes	Cement
Lower Lakes Towing	Self-Unloader	1	12,557	Great Lakes/St. Lawrence	Dry bulk
Mobil Oil, Chevron,					
Murphy Oil Corp. Partnership	Tanker	1	76,216	Maritimes	Liquid bulk
Oceanex Inc.	Other	3	41,157	St. Lawrence/East Coast Canada	Container, trailer, Ro-Ro, breakbulk
Parrish & Heimbecker Ltd. (P & H Shipping)	Bulker	2	32,570	Great Lakes/St. Lawrence	Dry bulk, grain
N.M. Paterson & Sons	Bulker	7	113,814	Great Lakes/St. Lawrence	Dry bulk, grain
Penney Ugland Inc.	Tanker	1	76,216	Maritimes	Liquid bulk
Pierre Gagne Contracting	Self-Unloader	1	20,148	Great Lakes/St. Lawrence	Dry bulk
Provmar Fuels Inc.	Tanker	2	5,949		Liquid bulk
Rigel Shipping Canada Inc.	Tanker	3	18,786	St. Lawrence	Liquid bulk
Shell Canada	Tanker	1	2,758	St. Lawrence	Liquid bulk
Transport Nanuk	Other	1	10,034	Arctic ports/St. Lawrence/International	Heavy lift, Ro-Ro, general, Lo-Lo
Upper Lakes Group	Bulker	13		Great Lakes/St. Lawrence	Dry bulk, grain
	Self-Unloader	8			
	<b>Total</b>	<b>21</b>	<b>390,556</b>		
<b>GRAND TOTAL</b>		<b>108</b>	<b>1,744,857</b>		

Sources: Lloyd's Register of Ships and Transport Canada data

Three of the top tug and barge companies are owned by Montana businessman Dennis Washington — Seaspan International Ltd., C.H. Cates & Sons Ltd. and Kingcome Navigation Company (formerly owned by MacMillan Bloedel). Seaspan International Ltd. is the largest Canadian tug and barge operator on the West Coast. Along with tug and barge transportation, Seaspan's main areas of business include log barging and ship docking.

### Northern Canada

Northern Transportation Company Limited (NTCL) is the major marine operator in northern Canada, an area that encompasses the Mackenzie River Watershed and the Arctic coast and islands. It handles bulk petroleum products and dry cargo for communities, defence installations and gas exploration sites across the region. Its operations cover the Mackenzie River, the Western Arctic, Alaska and Great Slave Lake.

Since 1975, the company has also provided tug and barge operations from the Port of Churchill to service communities in what is now the Kivalliq region of Nunavut. Most recently, NTCL has added tug and barge services to the Eastern Arctic via Valleyfield. (Historically, most cargo to the Eastern Arctic moved from Montreal on freighters as part of the Eastern Arctic sealift administered by the Canadian Coast Guard.)

NTCL is a member of the NorTerra group of companies, a holding company wholly owned by Aborigines. NorTerra Inc. is managed and owned equally by Inuvialuit Development Corporation, representing the Inuvialuit of the Western Arctic, and Nunasi Corporation, representing the Inuit of Nunavut.

According to *Lloyd's List of Shipowners, Managers, and Managing Agents, 1999-2000*, NTCL owns 87 vessels, including 71 barges (mainly tank barges that carry dry cargo on their decks) and 16 tugs, with a total fleet capacity of 71,449 GRT (Lloyd's does not include vessels under 100 GRT). NTCL's tugs were constructed between 1943 and 1973, and its barges between 1969 and 1975.

Other long-term operators in the Western Arctic include A. Frame Contracting Ltd. and Cooper Barging Service Ltd. The former operates a tug and several barges, and provides seasonal barge service to communities on Lake Athabasca. The latter operates a fleet of three tugs and six barges and provides resupply services on the Mackenzie and Liard Rivers from its base at Fort Simpson.

The Canadian Coast Guard has been managing the Arctic Sealift Program to re-supply coastal communities in the Eastern Arctic (Nunavut) since 1959. Operated on a cost-recovery basis, the service co-ordinates the delivery of

cargoes for federal departments, the territorial government, the United States Air Force, municipalities, and private businesses and citizens. The Coast Guard contracts with commercial cargo vessels and tankers to transport dry cargo from its main marshalling base in Montreal, as well as bulk fuel from northern distribution points. Goods are moved out of Montreal during the ice-free summer period to communities in the Eastern Arctic (Nunavut). Coast Guard personnel hire space on ships, act as booking agents, negotiate the lowest possible freight rates with carriers, and monitor the movement of cargo until it is discharged at its destination. The Sealift Program serves 26 communities encompassing Foxe Basin, the High Arctic and South and East Baffin Island. Each year, the program co-ordinates the movement of approximately 10,000 tons of cargo.

### INTERNATIONAL SERVICES

#### Bulk Shipping

Bulk shipping refers to the sector of the marine freight industry that, in general, carries single cargoes in large volume ships. Canadian shippers of bulk commodities such as grain, coal, iron ore and potash rely on bulk shipping operators for the movement of their cargo.

Bulk freight rates are normally set in the highly competitive global open market. In general, the market is made up of time charters (term contracts) and the "spot" market. The terms of charter contracts typically range from one to five years, depending on the volatility of prices. Longer contracts are common during periods of greater predictability in transportation rates, while shorter contracts usually prevail when prices are unstable. The majority of Canada's exports and imports are moved under these types of marine service arrangements.

The "spot" or "tramp" market is made up of short-term contracts covering a specific number of voyages, days or given quantity of cargo. Spot prices are set in open markets and exchanges. Prices depend on supply and demand factors such as vessel size, equipment, trade route and timeliness of the service requirement.

#### Liner Shipping

Liner services are offered according to published schedules and on specific trade routes with fixed itineraries. In general, liner carriers handle containerized and/or break-bulk cargoes, such as electronics, manufactured goods or frozen produce.

The international liner trade is dominated by large fleets of specialized container vessels operating on major trade routes around the world and is controlled to a large degree by Pacific Rim and Western European interests. While

Canada controls a significant fleet, it is still relatively small. Over the past few years, however, the Canadian presence has been increasing through the acquisition of other foreign lines. (The vessels in the Canadian-controlled international fleet operate under lower cost foreign flags.)

Shipping lines calling at Canadian ports may choose to provide conference or non-conference liner services. Ocean carriers providing liner services on a common trade route often elect to form a shipping conference and collectively agree on rates and/or conditions of service. Under a conference agreement, carriers are exempt from certain practices stipulated in the provisions of the *Competition Act*. They are entitled to this exemption, however, only if the conference has complied with the *Shipping Conferences Exemption Act, 1987* (SCEA).

Non-conference lines, also referred to as “independents,” are not subject to SCEA and therefore not required to file agreements or tariffs. They generally offer rates and services that are comparable with conference operators and contribute to a competitive international shipping industry.

Global traffic in containerized cargoes has expanded rapidly over the past decade, rising from approximately 80 million to 150 million containers (TEUs).<sup>7</sup> Much of the gain has been associated with expansion of markets and industrial output of the Asia-Pacific region. When measured in constant dollars, freight rates for ocean container shipping either remained steady or have declined during the last decade.<sup>8</sup>

### Services Available to Canadian Shippers

At the end of 1999, the Canadian Transportation Agency had 16 shipping conference agreements on file. Thirteen of these conferences file a tariff with the agency, down from 19 conferences in 1998. The majority operate from eastern Canada to Northern Europe and the Mediterranean. Among the major lines serving Canada as conference members are Atlantic Container Line, Canada Maritime Ltd., Hapag-Lloyd Container Line, P&O Nedlloyd Ltd., Mitsui O.S.K. Lines and the Orient Overseas Container Line.

Table 11-11 lists the 13 tariff-filing conferences serving Canada in 1999. Eleven serve the east coast and six serve the west coast. Six conferences serving the Canadian trades dissolved during 1999, most notably the Canada Westbound Rate Agreement (CWRA). The *US Ocean*

*Shipping Reform Act of 1998*, which came into effect on May 1, 1999, appears to have influenced the decision by several conferences to withdraw from the North American trades. The CWRA's successor on the route — the Canada Westbound Transpacific Stabilization Agreement — is not a tariff-filing conference and therefore not included in Table 11-11.

TABLE 11-11: SHIPPING CONFERENCES<sup>1</sup> SERVING CANADA IN 1999

Australia/Canada Container Line Association (E & W)
Canada/Australia-New Zealand Association of Carriers (E & W)
Canada/Australia-New Zealand Discussion Agreement (E)
Canada Transpacific Stabilization Agreement (E & W)
Canada-United Kingdom Freight Conference (E)
Canadian Continental Eastbound Freight Conference (E)
Canadian North Atlantic Westbound Freight Conference (E)
Continental Canadian Westbound Freight Conference (E)
Japan-East Canada Freight Conference (E)
Japan-West Canada Freight Conference (W)
Mediterranean Canadian Freight Conference (E)
Mediterranean North Pacific Coast Freight Conference (W)
New Zealand/Canada Container Line Association Conference (E & W)

Notes: E = East Coast; W = West Coast.

1 Tariff-filing conferences only.

Source: Canadian Transportation Agency

Shippers benefit not only from competition between conference and non-conference carriers, but also from competition within conferences through the independent action provision in the *Shipping Conferences Exemption Act, 1987*. The provision permits individual conference lines to offer a rate, or services, different from that which is published as part of the conference tariff. In addition, shipping conference rates paid by shippers can be negotiated and signed as a confidential “service contract” between a conference and a shipper. To comply with the Act, service contracts must be filed with the Canadian Transportation Agency.

In 1999, the agency accepted filings for 95 service contracts from seven conferences, down significantly from the 146 service contracts filed in 1998. The contracts applied to both inbound and outbound traffic and to origins/destinations on both the east and west coasts of Canada. The majority, however, applied to the east coast. The average duration of the contracts was one year.

7 Discussion Document on Regulatory Reform in International Maritime Transport; Maritime Transport Committee of the OECD, May 1999.

8 Discussion Document on Regulatory Reform in International Maritime Transport; Maritime Transport Committee of the OECD, May 1999, page 48.



## MARINE PASSENGER TRANSPORT SERVICES

### FERRY SERVICES

Canada's ferry services vary widely in terms of ownership, vessel type and operation. Owners range from small private operators to provincial governments and federal Crown corporations. Vessel types range from small cable ferries to large cruise-type vessels and fast ferries. In addition, some ferries operate seasonally, while others run year-round. Terminal and docking facilities are also variously owned, leased and operated by ferry companies, municipalities, provincial and federal governments, or other private companies.

All major ferry operators in Canada belong to the Canadian Ferry Operators Association (CFOA). As a group, these operators employ approximately 7,650 persons.

### Federal Subsidies to Ferry Operations

The 1995 National Marine Policy set out the federal government's goal to make the marine sector more commercially oriented. This initiative is consistent with the government's objective to make Canada's transportation system as a whole more responsive to future commercial challenges by reducing its involvement in the direct delivery of transportation services and allowing the private sector to provide some of them. As such, the government has been considering various ways to cut costs and improve efficiency through new vessel management and procurement practices, commercial operation of vessels, and the streamlining of ferry services.

For example, several of Marine Atlantic's ferry services were commercialized through arrangements with provincial governments or the private sector. Additionally, on June 1, 1997, Marine Atlantic's service between Borden, Prince Edward Island, and Cape Tormentine, New Brunswick, ended with the opening of the Confederation Bridge. The corporation, which will continue to provide the constitutionally guaranteed ferry services between Nova Scotia and Newfoundland, will see its subsidy level drop from \$122 million in 1993, to an estimated \$28.6 million in 1999.

Federally supported ferry services in Atlantic Canada are now limited to those provided by Marine Atlantic, a federal Crown corporation, and by three private-sector operators: Northumberland Ferries Limited, Bay Ferries Limited and C.T.M.A. Traversier Ltée. The federal government will also continue to provide an annual subsidy to the Province of British Columbia for ferry services in that province.

## CRUISE SHIP INDUSTRY

Canada's cruise ship industry continued to grow and diversify in 1999. The Alaskan luxury cruise market, using Vancouver as a base port, continued its upward trend, as did the Canada/New England market. Local Canadian operators also offer a multitude of lock, harbour and river cruises, as well as excursions such as those for whale watching. There is even a stern-wheeler offering daily cruises out of New Westminster, British Columbia, on the Fraser River.

In March 1999, amendments to Canada's *Criminal Code* came into effect, easing restrictions on casino gambling aboard cruise ships. International cruise lines are now able to operate their on-board casinos until they are five nautical miles from a Canadian port of call. Previously, vessels had to close casinos as soon as they reached Canadian territorial waters.

Foreign-based companies dominate extended cruise operations calling at Canada's east and west coast ports. There are two basic categories of extended cruises: the luxury cruise, with a vessel capacity of over 150 passengers; and the pocket cruise, having fewer than 150 passengers.

After the Caribbean and Europe, Alaska is the third largest cruise market in the world. Most luxury cruise vessels sailing to Alaska use the Port of Vancouver as their home port (where passengers embark and/or disembark). The *US Passenger Vessel Act* prohibits foreign-flag vessels from carrying passengers between US ports (i.e. embarking passengers at one US port and disembarking them at another). Trips between Vancouver and Alaska also fit conveniently into a seven-day time frame.

In eastern Canada, luxury cruise ships regularly travel along the eastern seaboard and up the St. Lawrence River to Quebec City and Montreal. They also sail out of New York to Halifax, Saint John and other Atlantic ports. While many of these cruises have traditionally travelled during the fall colour season, summer visits are also becoming popular. Pocket cruises travel the St. Lawrence River between Montreal or Quebec City, and Kingston or Rochester.

The Atlantic Canada Cruise Association forecast a total economic impact of \$18.9 million in 1999, for the 19 ports in the four Atlantic Provinces, up from \$13.6 million in 1998. In recognition of the increased vessel calls, the Halifax Port Authority opened a dedicated cruise facility in early September, and St. John's, Newfoundland, widened the entrance to its harbour to accommodate larger vessels. Improvements at other ports are also being planned.



## OVERVIEW OF MAJOR FERRY SERVICES AND CHANGES

**Marine Atlantic Inc. (MAI)** — *Ownership:* A federal Crown corporation

*Area of operation:* Operates the constitutionally guaranteed year-round ferry link between North Sydney, Nova Scotia, and Port aux Basques, Newfoundland, and the seasonal alternative between North Sydney, Nova Scotia, and Argentia, Newfoundland.

*1999 events:* The federal government conducted a major review to examine the level of service provided by MAI. The review found that its current capacity was insufficient to deal with the forecasted growth in traffic, particularly for the peak season. In December 1999, the Minister of Transport asked MAI to negotiate the procurement of a vessel within the limits set out in its 2000–2004 Corporate Plan, and to report back on specific procurement options as soon as possible.

**Coastal Transport Ltd.**

*Area of operation:* Operates year-round passenger/vehicle ferry service to the islands of Grand Manan and White Head, New Brunswick, under contract with the Province of New Brunswick. The ferry to Grand Manan leaves daily from Black's Harbour, New Brunswick, while White Head Island ferry departs several times a day from Grand Manan at Ingalls Head.

**Northern Cruiser Ltd. (NCL)**

*Area of operation:* Operated a single passenger/vehicle ferry service between Blanc Sablon, Quebec, and St. Barbe, Newfoundland, from May to January, under contract with the Province of Newfoundland.

*1999 events:* The Province of Newfoundland called a tender for this service and awarded the contract to a new operator starting in January 2000.

**Northumberland Ferries Limited (NFL)**

*Area of operation:* Provides seasonal passenger/vehicle ferry transportation (May 1 to December 20) between Caribou, Nova Scotia, and Wood Islands, Prince Edward Island, under contract with the federal government.

**Bay Ferries Limited**

*Area of operation:* Provides yearly passenger and vehicle ferry service between Saint John, New Brunswick, and Digby, Nova Scotia, and seasonal service (June 1 to mid-October) between Yarmouth, Nova Scotia, and Bar Harbor, Maine, under contract with the federal government.

**C.T.M.A Traversier Ltée**

*Area of operation:* Provides federally subsidized passenger/vehicle ferry service between Cap-aux-Meules, Magdalen Islands, Quebec, and Souris, Prince Edward Island, during the ice-free period from early April until late January. C.T.M.A. also provides a passenger/cargo ferry service from Cap-aux-Meules to Montreal from April to December and from Cap-aux-Meules to Matane during the winter, under contract with the Province of Quebec.

**Newfoundland and Labrador's Department of Works, Services and Transportation**

*Area of operation:* Provides all the intraprovincial and coastal ferry services under contract with private operators. The department has also responsibility for the Labrador Coastal Service, which was formerly provided by Marine Atlantic Inc.

**La Société des traversiers du Québec (STQ)**

*Area of operation:* Subsidized by the Quebec transportation ministry, STQ operates five year-round passenger/vehicle ferry services across the St. Lawrence River within the Province of Quebec. STQ also has responsibility for three other provincially subsidized ferry services, which are operated by private companies. These routes include Rivière-du-Loup to Saint-Siméon (operated by CFOA member La Traversée Rivière-du-Loup/Saint-Siméon Ltée), Montmagny to Île-aux-Grues, and Cap-aux-Meules to Île-d'Entrée.

**Quebec Ministry of Transportation**

*Area of operation:* Subsidizes a private operator servicing Isle Verte and a water taxi service in St. Augustin. The ministry is also responsible for the adjudication of contracts for transporting supplies to native communities in Northern Quebec.

**Ontario Ministry of Transportation**

*Area of operation:* Provides financial support to four year-round ferry operations in eastern Ontario. The Province of Ontario operates the Glenora, and the Wolfe Island to Kingston ferries, while ferry services to Amherst and to Howe islands are operated by their respective township authorities.

**Owen Sound Transportation Company (OSTC)**

*Area of operation:* Provides seasonal passenger/vehicle ferry services on Lake Huron between Tobermory, Ontario, and South Baymouth, on Manitoulin Island, from early May until mid-October. OSTC also manages transportation services on Lake Erie between Leamington/Kingsville and Pelee Island, Ontario, and Sandusky, Ohio, from April through December on behalf of the Ontario Ministry of Transportation.

**Manitoba Department of Highways and Transportation**

*Type of service:* Operates seven passenger/vehicle ferries, three motor vessels and four cable ferries.

*Area of operation:* Provides services on lakes and across rivers in the province, including river ferries to Norway House, Matheson Island and Cross Lake.

**British Columbia Ferry Corporation (BC Ferries)** — *Ownership:* Provincial Crown corporation

*Area of operation:* The British Columbia government receives a federal grant for the provision of ferry services in coastal waters. BC Ferries is the largest ferry operation in North America, with a fleet of 40 vessels on 26 routes serving 43 marine terminals, as well as seven other sites.

*1999 events:* On November 6, 1999, BC Ferries' second fast ferry, the *Pacific Discovery*, was officially commissioned. The *Discovery* began scheduled service as the lead vessel out of Horseshoe Bay on November 22, 1999. In January 2000, a dedicated fast ferry service will be introduced between Departure Bay and Horseshoe Bay with conventional vessels to provide only supplementary service during peak travel times. The *Discovery* cost \$10 million less to build than the first *PacificCat* and was completed eight months faster.

**British Columbia's Ministry of Transportation and Highways**

*Area of operation:* Operates and maintains British Columbia's inland ferry service and contracts with a private operator for the provision of a tug and barge ferry service. The ministry also subsidizes a private ferry service on one of the province's interior lakes.

On the Great Lakes, the luxury cruise ship *Columbus*, which first visited in 1997, has been joined by the French-owned *Le Levant* and Cunard-Seabourn's *Seabourn Pride*. This could indicate a resurgence in Great Lakes' cruising after a hiatus of over two decades.

## AIR TRANSPORTATION INDUSTRY

### MAJOR EVENTS IN 1999

#### INDUSTRY RESTRUCTURING

On August 13, 1999, the federal government issued an Order in Council, using its authority under the *Canada Transportation Act*, that established a special 90-day process to support the orderly restructuring of the Canadian airline industry. During this period, all parties wishing to discuss airline restructuring options with Canada's two major airlines, Air Canada and Canadian Airlines International Ltd., were exempted from the conspiracy provisions of the *Competition Act*. The government took this action for two reasons: to avoid any potential disruptions to the national air transportation system that might have resulted from the weak financial position of Canadian Airlines; and to ensure that all aspects of the public interest were considered in any major airline industry restructuring.

On October 26, 1999, before the 90-day period had expired, the Minister of Transport released "A Policy Framework for Airline Restructuring in Canada." This document detailed the federal government's public policy objectives, which would be achieved through commitments from a dominant carrier, conditions on the restructuring, legislation and regulations.

At that time, the Minister sought the views of parliamentarians by referring the document to the House of Commons Standing Committee on Transport and the Standing Senate Committee on Transport and Communications. Both committees published reports with recommendations in early December 1999.

In addition to stating that safety and service to the travelling public in both official languages are fundamental, the policy framework included five areas of concern to the government. These were Canadian ownership and control, fostering competition, pricing,

service to small communities, and rights and concerns of employees. It also outlined a new three-track process for reviewing mergers and acquisitions in the airline industry.

During the 90-day period, three proposals that would have restructured the industry were put forward by the private sector. Of these, only one remained by the close of the 90-day period. This was an offer made on November 5, 1999, by 853350 Alberta Ltd., a corporation owned in part by Air Canada, to acquire all of the common and non-voting common shares of Canadian Airlines Corporation. The proposed acquisition was subjected to a formal review by the Competition Bureau and the Minister of Transport.

On December 21, 1999, the Minister announced that the government was prepared to allow the proposal to acquire Canadian Airlines to proceed on the basis of commitments that had been secured from Air Canada and 853350 Alberta Ltd. and the undertakings that the parties had made to the Commissioner of Competition.

It is expected that this acquisition will result in Canada's two major carriers, although operated separately for the time being, coming under common control. The commonly controlled entities can be expected to offer most of the services and carry the vast majority of passengers and cargo within Canada, the Canada-US market and other international services for the foreseeable future.

### MAJOR COMMERCIAL AIR SERVICES

In 1999, scheduled air services continued to be defined largely by the operations of the nation's largest operators, Air Canada and Canadian Airlines. These airlines, in co-operation with their subsidiaries and commercial partners, provided competing networks of domestic, transborder and international air services. Each airline belonged to a global alliance that, through code sharing,<sup>9</sup> can offer travellers a seamless travel experience on one ticket, even if more than one airline within the alliance is part of the itinerary. Table 11-12 provides a more detailed look at global airline alliances.

Canada's large operators of charter air services, including Air Transat, Canada 3000, Royal Air and SkyService, continued to be the price leaders in low-fare long-haul air travel. Overall these operators' importance is not only in terms of market share, but also of the extra capacity they provide and the influence they have on

9 Code-sharing is the ability to sell air travel under one airline's name on the flights of another airline. In the international context, code-sharing allows airlines to sell transportation on the network of services of code-share partners as if it was their own. In addition, by co-ordinating their marketing efforts, alliance partners can provide a combined product to the consumer, including common check-in, better co-ordinated connections, and priority baggage transfer.

TABLE 11-12: GLOBAL AIRLINE ALLIANCES, 1999

STAR	Oneworld	Wings	Delta/Air France
Air Canada	Canadian Airlines <sup>1</sup>	KLM Royal Dutch	Delta Airlines
United Airlines	American Airlines	Airlines	Air France
Lufthansa	British Airways	Northwest Airlines	AeroMexico
Thai Airways	Qantas	Alitalia	
International	Cathay Pacific	Continental Airlines	
VARIG	Iberia	Kenya Airways	
SAS Scandinavian Air System	Finnair	Braathens	
Air New Zealand			
Ansett Australia			
All Nippon Airways			
Associated:	Associated:	Associated:	Associated:
Singapore Airlines	Japan Airlines	Air China	Korean Airlines
Asiana Airlines	China Eastern Airlines	Japan Air System	TAM
EVA Airways	Airlines	Malaysia Airlines	
Pakistan International Airlines	Ansett New Zealand		
China Airlines	Air Niugini		
China Southern Airlines	Air Pacific		
Mandarin Airlines	Philippine Airlines		
Korean Air	Aer Lingus		
Mexicana	SwissAir		
British Midland	Sabena		
Austrian Airlines	Asiana		

1 Will leave Oneworld in 2000.

Source: Airline Business and Aviation Daily

prices. Charter carriers operate according to a distinct seasonal pattern: in the winter, their flights connect Canadian centres with "sun destinations" in Florida, Mexico and the Caribbean, while in the summer their services operate across Canada and to Europe. This reflects the pattern of leisure travel during these seasons and is complemented by the long-haul domestic services, which they also provide on a year-round basis.

Table 11-13 shows the relative market share of mainline, charter and significant independent airlines in Canada's domestic and international markets in the summer of 1999.

TABLE 11-13: MARKET SHARES OF AIRLINES, JULY 1999

	(Thousands)		(Per cent)			
	Average daily seat-kilometres	Air Canada and affiliates	Canadian Airlines and affiliates	Charter Airlines	West-Jet	First Air
<b>Domestic Markets</b>						
Transcontinental	81,749	52	37	11	-	-
Western Canada	26,930	29	43	6	22	-
Eastern Canada	28,906	64	27	9	-	-
Northern Canada	3,695	18	54	10	-	18
<b>Total Domestic</b>	<b>141,278</b>	<b>49</b>	<b>37</b>	<b>10</b>	<b>4</b>	<b>-</b>
	Average daily seat-kilometres	Air Canada and affiliates	Canadian Airlines and affiliates	Foreign Airlines	Charter	
<b>International Markets</b>						
Transborder	137,635	27	13	54	6	
Atlantic	229,489	26	7	34	33	
Pacific	101,735	14	35	51	0	
Southern	21,957	22	21	18	39	
<b>Total International</b>	<b>490,816</b>	<b>24</b>	<b>15</b>	<b>42</b>	<b>19</b>	

Source: Estimated by Transport Canada based on published airline schedules and historical data

WestJet took delivery of two additional B737-200 aircraft during 1999, bringing its total fleet to 14 aircraft. These new aircraft were used to add three destinations to its network, Grande Prairie, Prince George and Thunder Bay, and to increase its frequency of service on existing routes. Table 11-14 shows the types of aircraft in the fleet of a number of important Canadian air carriers.

TABLE 11-14: AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE

Carrier	Wide-bodied	Narrow-bodied	Propeller-driven	Total
Air Canada	46	112	0	158
Air Canada affiliates:	-	-	-	-
Air BC	0	5	15	20
Air Nova	0	5	30	35
Air Ontario	0	0	26	26
Air Transat	15	7	0	22
Canada 3000	3	12	0	15
Canadian Airlines International	25	57	0	82
Canadian Airlines International affiliates:	-	-	-	-
Calm Air International	0	0	11	11
Inter-Canadian	-	-	-	-
Canadian Regional	0	29	25	54
Ontario Regional				
Air Georgian				
First Air	0	8	19	27
Kelowna Flightcraft	0	15	9	24
Royal Aviation	4	3	1	8
SkyService	1	3	3	7
WestJet	0	14	0	14
<b>Total</b>	<b>94</b>	<b>270</b>	<b>139</b>	<b>503</b>

Source: BACK/Lundkvist Fleet Database, as of December 31, 1999

A number of carriers acting on behalf of courier operators provided all-cargo air services, including Kelowna Flightcraft, Air Express, All Canada Express and International Charters Canada (ICC). Table 11-15 shows the Canadian carriers operating for US-based courier companies.

TABLE 11-15: CANADIAN CARRIERS OPERATING FOR US-BASED COURIER ENTITIES

US Courier	Canadian Air Carrier
Airborne	Regency Airlines Knighthawk Air Express Perimeter
BAX Global	All Canada Express
DHL	All Canada Express Western Express Airlines Airwave
Emery	First Air ICC Canada
TNT	Knighthawk
UPS	Skylink

Source: Transport Canada, Air Policy



Table 11-16 lists the economic licence authorities held in Canada in 1999 and illustrates the number of US-based and other foreign carriers that have the authority to operate to or from Canada on both a scheduled and charter basis.

**TABLE 11-16: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 1999<sup>1</sup>**

Type:	Canadian				Other	
	Small	Medium	Large	All-Cargo	US	Foreign
<b>Classification</b>						
Domestic	851	29	14	28	-	-
International						
Scheduled	14	29	80	4	62	57
Non-Scheduled	410	21	12	23	757	82
Total Type	1,275	79	106	55	819	139
Total Canadian	1,515					
Total US					819	
Total Other Foreign						139

<sup>1</sup> This represents licence authorities, not the number of carriers; e.g. a carrier can hold multiple licence authorities.

Source: Canadian Transportation Agency

Table 11-17 shows the regional carriers in commercial partnerships with Air Canada and Canadian Airlines at the end of 1999.

**TABLE 11-17: AIR CANADA AND CANADIAN AIRLINES REGIONAL CODE-SHARE PARTNERS AS OF DECEMBER 31, 1999**

Large Regionals	Other Partners
<b>Air Canada</b>	
Air BC	Air Creebec
Air Ontario	Alberta Citylink
Air Nova	Aviation Québec-Labrador
Northwest Territorial <sup>1</sup>	Central Mountain Air
<b>Canadian Airlines</b>	
Air NorTerra <sup>2</sup>	Air Alma
Calm Air	Ontario Regional (Air Georgian)
Canadian Regional	Pacific Coastal Airlines
Inter-Canadien <sup>3</sup>	Region Air
	Air Labrador

<sup>1</sup> owned by First Air.

<sup>2</sup> doing business as Canadian North.

<sup>3</sup> ceased operations November 29, 1999.

Source: Air Canada, Canadian Airlines

## REGIONAL & LOCAL AIR SERVICES

In April 1999, two of Air Canada's wholly owned subsidiaries serving Atlantic Canada and Quebec — Air Nova and Air Alliance — completed the consolidation of their operations, which had begun in the fall of 1998. While these carriers continue to operate as separate brands under the management direction of Air Nova Inc., their fleets have been redeployed to better match seating capacity to local demand, including the addition of more air services by Air Alliance, whose operations are more focused on serving Quebec.

Inter-Canadien, an independently owned commercial partner serving Ontario, Quebec and Atlantic Canada within Canadian Airlines' domestic route network, suspended operations on November 29, 1999, due to financial difficulties. Inter-Canadien's commercial partner, Canadian Airlines along with its subsidiary Canadian Regional, and Air Canada and its subsidiaries Air Nova, Air Alliance and Air Ontario, as well as Air Georgian, moved to offer services to most of the communities served by Inter-Canadien.

Independent airlines (i.e. carriers not affiliated with either Air Canada or Canadian Airlines) have been reluctant to compete directly with regional carriers. As a result, there is little overlap between independent airline services and those of the national networks. While independents are most prominent in the northern parts of Newfoundland and central and western Canada, they have also filled service voids left by regional affiliates. A case in point was the independent's takeover of services to Stephenville, Newfoundland, a region that had previously been served by Inter-Canadien. More recently, some independents (e.g. Regionair and Air Montreal) have pursued more aggressive strategies to compete with regional affiliates. Table 11-18 lists a number of independent airlines and their major bases of operation.



**TABLE 11-18: INDEPENDENT LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF JULY 1, 1999**

<i>Airline</i>	<i>Major Base(s)</i>
Air Creebec	Montreal, Timmins and Val d'Or
Air Inuit	Kuujuaq
Air Montreal	Montreal and Quebec
Air North	Whitehorse
Air Sask	La Ronge and Saskatoon
Air Tindi	Yellowknife
Aklak Air	Inuvik
Athabaska Airways	Saskatoon and Winnipeg
Baxter Aviation	Vancouver Harbour
Bearskin Airlines	Sudbury and Thunder Bay
Contact Air	Fort McMurray
Harbour Air	Vancouver Harbour
Helijet	Victoria Harbour
K.D. Air	Vancouver
Kenn Borek Air	Iqaluit and Resolute
Keystone Air Service	Winnipeg
Labrador Airways	Goose Bay and St. John's
Nakina Air Service	Thunder Bay
North Vancouver Air	Vancouver
Northwestern Air Lease	Grande Prairie and Yellowknife
North-Wright Airways	Norman Wells and Yellowknife
Pacific Coastal	Vancouver
Pem-Air	Pembroke
Perimeter Airlines	Winnipeg
Provincial Airlines	Goose Bay and St. John's
Regionair	Sept-Îles
Shuswap Air	Vancouver
Skyward Aviation	Rankin Inlet and Thompson
West Coast Air	Vancouver Harbour

Source: Official Airline Guide

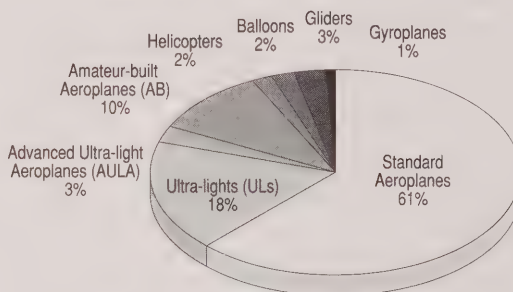
**TABLE 11-19: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 1999**

<i>Type of aircraft</i>	<i>Total aircraft</i>
Standard Aeroplanes	13,460
Ultra-lights (ULs)	3,784
Advanced Ultra-light Aeroplanes (AULAs)	562
Amateur-built Aeroplanes (AB)	2,209
Helicopters	387
Balloons <sup>1</sup>	440
Glider	596
Gyroplanes <sup>2</sup>	182
<b>Total Private registered aircraft</b>	<b>21,620</b>

1 Includes airships.

2 Includes ornithopters.

Source: Canadian Civil Aircraft Register

**FIGURE 11-8: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 1999**

Note: Airships and ornithopters are included in the balloon and gyroplane categories respectively.

Source: Canadian Civil Aircraft Register

## GENERAL AVIATION

The general aviation<sup>10</sup> sector comprises all types of private-sector aviation activity except air transportation services. It includes both recreational flying and commercial activities.

General aviation represented about half of all aircraft movements at controlled airports during 1998, although much of the activity was also at non-controlled airports. Recreational flying in its various forms represents the bulk of general aviation activity, underlining the former's importance in civil aviation in Canada. The importance of recreational aviation is also evident by other measures: it accounts for about two thirds of Canada's pilots, three quarters of aircraft registered in Canada in 1999, and represents the largest segment of Canadian civil aviation activity. Further details about recreational aviation can be found in Table 11-19 and Figure 11-8. A summary of personnel licences appears in Table 11-20 and 11-21.

<sup>10</sup> General aviation has not been formally defined in Canada. Consequently, it has been defined for the purpose of this report as all non-commercial aviation activities.

TABLE 11-20: SUMMARY OF PERSONNEL LICENCES AND PERMITS  
AS OF DECEMBER 1999

	<i>In Force</i>	<i>Issued in 1999</i>	<i>Male</i>	<i>Female</i>
<b>Aeroplanes</b>				
Private Pilots	27,928	3,193	26,318	1,610
Commercial Pilots	9,604	1,352	9,063	541
Airline Transport Pilots	10,856	597	10,551	305
Total	48,388	5,142	45,932	2,456
<b>Helicopters</b>				
Private Pilots	331	37	317	14
Commercial Pilots	2,795	242	2,735	60
Airline Transport Pilots	699	52	688	11
Total	3,825	331	3,740	85
<b>Permits</b>				
Glider Pilot	5,969	408	5,246	723
Gyroplane Pilot	25	5	23	2
Balloon Pilot	266	12	242	24
Ultra-Light Pilot	2,600	209	2,523	77
Recreational Pilot	1,019	254	951	68
Total	9,879	888	8,985	894
<b>Other Licences</b>				
Flight Engineers	527	14	517	10
Air Traffic Controllers	2,034	28	1,887	147
Total	2,561	42	2,404	157
<b>Total Licences &amp; Permits</b>	<b>64,653</b>	<b>6,403</b>	<b>61,061</b>	<b>3,592</b>

Source: Transport Canada, Safety &amp; Security

## SPECIALTY AIR SERVICES

The specialty air services sector is made up of a variety of commercial air activities that share one common characteristic: they are not involved in the movement of passengers or cargo between two points. This sector's activities include flight training, parachute jumping, glider towing, aerial fire fighting, aerial inspection and construction, aerial photography and surveying, advertising, weather-sounding and crop spraying. Transportation of human organs for transplant, forest fire management and heli-logging are other activities which use specialty air services. In addition, air-cushion vehicle services are included in this category. While there are some large companies in this sector, such as Canadian Helicopters, many are very small operators serving local markets.

## BUSINESS AVIATION

The business aviation sector continued to grow in 1999, with manufacturers reporting increases in deliveries and some backlog orders. One factor helping is "fractional ownership", whereby individuals or businesses who would not otherwise own an aircraft by themselves, share its use by selling units of flight time. Fractional ownership programs in Canada are regulated as commercial air services.

TABLE 11-21: PERSONNEL LICENCES AND PERMITS BY PROVINCE,  
DECEMBER 1999

	<i>Number of Licences</i>	<i>Per cent of Total</i>
British Columbia	12,408	19.2
Alberta	8,262	12.8
Saskatchewan	2,611	4.0
Manitoba	306	4.7
Ontario	20,753	32.1
Quebec	11,036	17.1
New Brunswick	1,046	1.6
Nova Scotia	1,815	2.8
Prince Edward Island	178	0.3
Newfoundland	1,096	1.7
Yukon	292	0.5
Northwest Territories	402	0.6
Other	1,701	2.6
<b>Canada</b>	<b>64,665</b>	<b>100</b>

Source: Transport Canada, Safety &amp; Security

# APPENDIX 11-1

## RAILWAY OPERATORS BY REGION, 1999

	BC	Alta	Sask	Man	Ont	Que	NB	NS	Nfld
<b>Transcontinental</b>	CN CP	CN CP	CN CP	CN CP	CN CP	CN CP	CN CP	CN	
<b>Regional and Local</b>	BCOL E&N OKAN SRY	ARI RCW RLW RMN	SRC CTR HBR	CEMR GWWD HBR SMR	AC BCRY* GEXR GJR HCRY NAR* OCRR OLO ONR ROV RSO OSR STER	CCFG* CDAC CFBC CFC CFM CFQG CFRR CFRS CRC MR NCR NV* QNSL QSR ROV SLAR	EMR NBS NER	CBNS DVR WHR	QNSL
<b>Terminal or Switching</b>					ETR PCHR	Arnaud			WLR
<b>US Railways</b>	BN UP			BN <sup>2</sup>	CSXT NS <sup>1</sup>	CSXT <sup>3</sup>	BAR		
<b>Passenger or Commuter</b>	VIA <sup>2</sup> AMTRAK <sup>2</sup> BCR BC TRANSIT	VIA <sup>2</sup>	VIA <sup>2</sup>	VIA <sup>2</sup>	VIA <sup>2</sup> GO	VIA <sup>2</sup> AMTRAK <sup>2</sup> AMT <sup>2</sup>	VIA <sup>2</sup>	VIA <sup>2</sup>	

Note: A number of bridge or terminal companies are not identified here, nor are subsidiaries of other companies. A number of rail tourist operations including the WPY, WSJR and GCRT have also not been included. Note that RMN also operates into the NWT.

1 Running rights, no track owned in Canada

2 Running rights

3 Running rights and owned trackage

4 Non-operating, owned trackage only

5 Prior to June 1, 1999, Conrail

## LEGEND

AC	Algoma Central	MR	Mirabel Railway
AMT	Agence Métropolitaine de Transport	NAR	Nepean & Arnprior
ARI	Alberta RailNet Inc.	NBS	New Brunswick Southern
Arnaud	Arnaud	NCR	Nipissing Central
BAR	Bangor & Aroostock	NER	New Brunswick East Coast
BCRY	Barrie – Collingwood	NS*	Norfolk Southern
BCOL	BC Rail	NV*	Northern Vermont
BN	Burlington Northern	OCRR	Ottawa Central
CDAC	Canadian American	OKAN	Okanagan Valley
CBNS	Cape Breton & Central Nova Scotia	OLO	Ontario L'Orignal
CCFG	Chemin de fer de la Gaspésie	ONR	Ontario Northland
CEMR	Central Manitoba	OSR	Ontario Southland
CFBC	Chemin de fer de la Baie-des-Chaleurs	PCHR	Port Colborne Harbour
CFC	Chemin de fer Charlevoix	QNSL	Quebec, North Shore & Labrador
CRC	Cartier	QSR	Quebec Southern
CFM	Chemin de fer de la Matapédia	RCW	RailLink Central Western
CFQG	Chemin de fer Québec-Gatineau	RLW	RailLink Lakeland & Waterways
CFRR	Chemin de fer Rivière-Romaine	RMN	RailLink Mackenzie Northern
CFRS	Chemin de fer Roberval-Saguenay	ROV	RailLink Ottawa Valley
CSXT	CSX	RSO	RailLink Southern Ontario
CTR	Carlton Trail	SLAR	St. Lawrence & Atlantic (Quebec)
DVR	Devco	SMR	Southern Manitoba
EMR	Eastern Maine	SRC	Southern Rail Co-operative
ETR	Essex Terminal	SRY	Southern Railway of BC
GCRC	Great Canadian Railtours	STER	St. Thomas & Eastern
GEXR	Goderich & Exeter	UP	Union Pacific
GJR	Guelph Junction	WLR	Wabush Lake
GWWD	Greater Winnipeg Water District	WSJR	Waterloo St. Jacobs
HBR	Hudson Bay	WHR	Windsor & Hantsport
HCRY	Huron Central	WPY	White Pass & Yukon

Source: Transport Canada

## APPENDIX 11-2

## SELECTED URBAN TRANSIT SYSTEMS OF IMPORTANCE TO CANADA

Transit Systems	City (Region)	Province/Territory	Fleet Composition			
			Large Buses	Small Buses	Other Buses	Total
Township Transit Services Inc.	Abbotsford	British Columbia	25	-	33	58
Kamloops Transit	Kamloops	British Columbia	40	-	12	52
Kelowna Bus & Transportation Inc.	Kelowna	British Columbia	38	-	-	38
Nanaimo Regional Transit System	Nanaimo	British Columbia	33	3	10	46
West Vancouver Municipal Transit	W. Vancouver	British Columbia	30	-	-	30
Penticton Transit Service Ltd.	Penticton	British Columbia	20	12	-	32
Powell River Transit	Powell River	British Columbia	8	-	-	8
BC Transit	69 Transit Systems	British Columbia	493	188	6	687
Calgary Transit Division	Calgary	Alberta	619	21	26	666
Edmonton Transit System	Edmonton	Alberta	611	55	196	862
G.P. Transit	Grande Prairie	Alberta	10	-	-	10
Medicine Hat Transit	Medicine Hat	Alberta	10	10	-	20
Saint Albert Transit	Saint Albert	Alberta	34	2	-	36
Strathcona Public Transit	Strathcona	Alberta	34	7	-	41
Moose Jaw Transit System	Moose Jaw	Saskatchewan	9	5	-	14
Regina Transit System	Regina	Saskatchewan	100	-	16	116
Saskatoon Transit Services	Saskatoon	Saskatchewan	108	-	-	108
Brandon Transit	Brandon	Manitoba	19	3	-	22
Winnipeg Transit System	Winnipeg	Manitoba	535	-	-	535
Barrie Transit	Barrie	Ontario	21	5	-	26
City of Belleville Transit	Belleville	Ontario	15	-	1	16
Brampton Transit	Brampton	Ontario	101	-	-	101
Corporation of the City of Brantford	Brantford	Ontario	24	2	-	26
Burlington Transit	Burlington	Ontario	34	23	-	57
Cambridge Transit	Cambridge	Ontario	25	-	-	25
Cornwall Transit	Cornwall	Ontario	28	25	-	53
Guelph Transit	Guelph	Ontario	36	4	2	42
Kingston Transit	Kingston	Ontario	33	-	-	33
Kitchener Transit	Kitchener	Ontario	105	-	-	105
London Transit Commission	London	Ontario	170	14	-	184
Markham Transit	Markham	Ontario	58	128	-	186
Mississauga Transit	Mississauga	Ontario	298	-	-	298
Newmarket Transit	Newmarket	Ontario	13	3	-	16
Niagara Transit	Niagara	Ontario	-	-	-	0
Orillia City Transit	Orillia	Ontario	7	-	-	7
Oshawa Transit Commission	Oshawa	Ontario	50	-	-	50
OC Transpo	Ottawa-Carleton	Ontario	820	8	2	830
Owen Sound Transit	Owen Sound	Ontario	6	-	-	6
Peterborough Transit	Peterborough	Ontario	32	-	-	32
Pickering Transit	Pickering	Ontario	23	5	-	28
Sarnia Transit	Sarnia	Ontario	23	9	-	32
Sault Sainte Marie Transit	Sault Sainte Marie	Ontario	24	10	-	34
Stratford Transit	Stratford	Ontario	14	3	-	17
Sudbury Transit	Sudbury	Ontario	43	-	-	43
Thunder Bay Transit	Thunder Bay	Ontario	49	-	-	49
Timmins Transit	Timmins	Ontario	20	7	-	27
Go Transit	Metro Toronto	Ontario	218	-	-	218
Toronto Transit Commission	Metro Toronto	Ontario	1,511	140	-	1,651
Vaughan Transit	Vaughan	Ontario	20	3	4	27
Welland Transit	Welland	Ontario	13	2	1	16
Transit Windsor	Windsor	Ontario	85	3	-	88
Woodstock Transit	Woodstock	Ontario	13	2	1	16
Corporation Intermunicipale de Transport du Saguenay	Saguenay	Quebec	-	-	-	0
Société de Transport de l'Outaouais	Outaouais	Quebec	178	-	-	178
Société de Transport de la Ville de Laval	Laval	Quebec	225	-	-	225
Société de Transport de la Rive Sud de Montréal	Rive-Sud Montréal	Quebec	315	-	-	315
Société de Transport de la Communauté Urbaine de Montréal	Met. Montreal	Quebec	1,690	81	-	1,771
Société de Transport de la Communauté Urbaine de Québec	Met. Quebec	Quebec	531	4	-	535
Corporation Métropolitaine de Transport Sherbrooke	Met. Sherbrooke	Quebec	69	-	-	69
Corporation Intermunicipale de Transport des Forges	Met. Trois-Rivières	Quebec	40	-	-	40
Fredericton Transit Department	Fredericton	New Brunswick	24	-	2	26
Codiac Transit	Moncton	New Brunswick	24	-	-	24
Saint John Transit Commission	Saint John	New Brunswick	45	-	2	47
Halifax Regional Municipality Metro Transit	Met. Halifax	Nova Scotia	158	15	2	175
Kings Transit Authority	Kentville	Nova Scotia	4	-	-	4
Transit Cape Breton Regional Transit Authority	Cape Breton	Nova Scotia	18	4	-	22
Whitehorse Transit	Whitehorse	Yukon	14	-	2	16

Source: Bus Industry Directory 2000





# FREIGHT TRANSPORTATION 12

*Intelligent Transportation Systems (ITS) are becoming increasingly important in transportation, and particularly for the movement of freight by the trucking industry.*

This chapter discusses freight transportation from a modal perspective, looking at domestic, and when possible, international freight movements. This approach gives a sense of the relative use made of each different mode.

This chapter also examines freight traffic by commodity group. Both the rail and truck modes discuss freight in terms of tonne-kilometres, which provides a physical measure of freight movement used to assess trends in traffic. It captures two significant dimensions of freight traffic: volume and distance.

## RAIL TRANSPORTATION

The Canadian operations of both CN and CPR experienced a drop in output in 1998. CN registered 154 billion revenue tonne-kilometres, compared with 161 billion in 1997. CPR's revenue tonne-kilometres dropped by 2.6 per cent to 115 billion. Class II carriers, on the other hand, in aggregate, experienced an estimated six per cent increase in output, with 29.9 billion revenue tonne-kilometres in 1998.

As mentioned in Chapter 10, Class I railways are generally defined to include CN and CPR, as well as VIA Rail Canada. Class II railways include those known variously as regional and shortline railways.

CN and CPR both reported increased output for their systems (Canadian and US operations) in 1999 relative to 1998. CN's revenue tonne-kilometres reached 210 billion, up from 202 billion in 1998 (including Illinois Central output). CPR reported 146 billion revenue tonne-kilometres, up from 140 billion in 1998.

Output for Canadian operations in 1999 is expected to be close to 1998 results. Estimated output of Canadian operations in 1999 is 152 billion revenue tonne-kilometres for CN and 114 billion revenue tonne-kilometres for CPR (based on three quarters of data on Canadian operations and four quarters of system data).

## RAIL TRAFFIC — TRADE WITH THE US

From 1997 to 1998, rail imports from the US grew by 4.6 per cent, while rail exports to the US grew by 5.2 per cent.

### EXPORTS

Exports reached 56.1 million tonnes in 1998, up from 53.4 million tonnes in 1997. As shown in Table 12-1, all commodity sectors, except automotive and chemical, saw increased export flows. Almost half of the growth took place in the forest products sector, where traffic to the US increased by 1.4 million tonnes. New Brunswick alone almost doubled its forest exports to 1.1 million tonnes. Other large increases took place in Alberta (coal and forest products), British Columbia (grain), Nova Scotia (forest products), Ontario (cement, liquid petroleum gas, gasoline and other fuel, and forest products), Quebec (chemicals) and Saskatchewan (potash).

Shares of exports by province in 1998 were virtually unchanged from 1997. Ontario accounted for 29 per cent of rail exports by tonnage, while Alberta, British Columbia, Quebec and Saskatchewan each accounted for between 15 and 19 per cent. Shares of exports by value were also unchanged. Ontario exported 63 per cent of goods by value, followed by Quebec with 15 per cent and British Columbia with eight per cent.

TABLE 12-1: GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY, 1997 AND 1998

	Exports		Imports	
	1998 tonnage	Per cent growth over 1997	1998 tonnage	Per cent growth over 1997
Grain	4,012,169	1.5	655,504	25.0
Other agriculture and food	1,419,602	13.5	1,570,532	(0.3)
Automotive	1,941,663	(7.8)	1,291,267	(8.7)
Chemicals	8,891,801	(0.7)	4,317,926	7.5
Coal	464,894	40.3	178,306	19.0
Fertilizers	8,286,833	1.7	81,098	10.8
Forest products	19,618,328	7.7	1,196,339	(0.6)
Manufactured products	1,408,283	16.6	2,445,992	(5.7)
Metals	3,193,770	6.1	1,176,594	(18.4)
Mine products	3,684,789	9.8	1,811,163	39.7
Petroleum products	3,209,724	13.0	713,437	50.6
<b>Total</b>	<b>56,131,856</b>	<b>5.2</b>	<b>15,438,158</b>	<b>4.6</b>

Source: Statistics Canada, International Trade Division

Rail tonnage exported from Alberta declined by just over one per cent in 1998, and reported exports from Newfoundland (mostly ores and mine products) declined by over 70 per cent. British Columbia, Quebec and Saskatchewan saw only small increases in exports, while exports from each of Ontario and Manitoba rose by about nine per cent. The largest relative increases were in the Maritime provinces. New Brunswick, Nova Scotia and Prince Edward Island respectively exported 75, 91 and 133 per cent more in 1998 than in the previous year. In each of these three provinces, forest products were the major source of increased export trade.

## IMPORTS

Rail imports reached 15.4 million tonnes in 1998, up from 14.8 million tonnes in 1997. Table 12-1 shows that there were slight declines in the imports of agricultural and food products (other than grain) and forest products in 1998. The automotive, metals and manufactured goods sectors had a sharper decrease in imports.

Increased imports were recorded from 1997 to 1998 for chemicals (plastics and rubbers), ores and mine products (mostly stone and limestone), grain, gasoline and fuel. The 50 per cent increase in petroleum imports is due to traffic from the US North East into Ontario.

According to trade import data, which records provinces of customs clearance, Ontario's share of total imports by tonnage dropped from 53 per cent in 1997 to 48 per cent in 1998. Quebec's share was fairly steady at just under 15 per cent, while British Columbia's share nearly doubled to 12.5 per cent.

Share of imports by value was mostly unchanged in 1998, except for a three per cent shift from Ontario (69 per cent of total imports) to Alberta. Other than

Quebec and Alberta, with 12 and eight per cent of imports by value, respectively, all other provinces recorded steady shares of fewer than five per cent.

Of all the provinces, British Columbia showed the largest increase in imports by rail, with 75 per cent more tonnes brought in (cleared) in 1998 than in 1997 (mostly stone and limestone). Alberta, Manitoba, New Brunswick and Quebec also showed import increases of about ten per cent or more. Ontario, Saskatchewan and Nova Scotia showed a decrease in imports of about 5, 24 and 27 per cent, respectively.

## RAIL TRAFFIC — OVERSEAS TRADE

A significant amount of rail traffic each year consists of shipments to and from marine ports. In 1998, this traffic accounted for about 115 million tonnes of goods shipped by rail.

## RAIL—MARINE EXPORTS

In 1998, Class I railways carried 72.1 million tonnes to Canadian port facilities for export. Approximately 79 per cent of these shipments were made up of bulk products, including coal (33 million tonnes), grain (20 million tonnes), potash (4.3 million tonnes) and sulphur (2.7 million tonnes). A further 9.3 per cent was accounted for by mixed commodities shipped in intermodal units (4.5 million tonnes) and forest products (2.2 million tonnes). Of all goods carried to marine ports, 1.8 million tonnes originated in the US, and 95 per cent of these were in intermodal units.

In addition to these rail—marine exports, the iron ore railways in Labrador and Quebec sent about another 34 million tonnes to export positions along the St. Lawrence River.

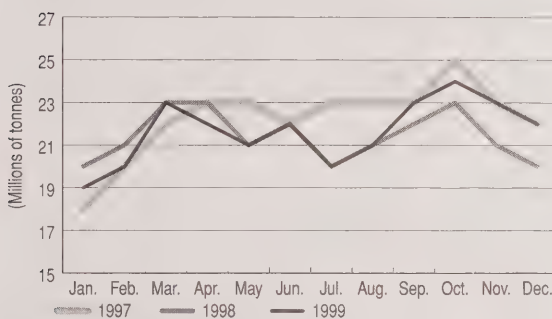
## RAIL—MARINE IMPORTS

Class I railways brought about 7.1 million tonnes of goods inland from Canadian ports in 1998. Approximately 5.2 million tonnes of mixed commodities in intermodal units, together with 1.1 million tonnes of phosphate rock, accounted for 89 per cent of these shipments by weight. Of the intermodal tonnage, about 36 per cent continued on to destinations in the US, while Ontario and Quebec were the destinations for 2.1 million and 0.8 million tonnes, respectively. The phosphate rock shipments originated entirely from the Port of Vancouver and were sent to destinations in Alberta.

## RAIL TRAFFIC — COMMODITY SECTORS

Rail traffic classified by commodity sectors — including grain, fertilizers, ores and mine products, coal, forest products, industrial products and intermodal products — made up 97 per cent of rail traffic in Canada in 1999. Flows in the first three commodity groups declined from 1998 levels, while the other four groups (especially coal and intermodal) saw increased traffic. Total traffic rose in 1999 to 260 million tonnes, up from 257 million tonnes in 1998. Figure 12-1 shows the total monthly commodity loadings by rail from 1997 to 1999.

FIGURE 12-1: TOTAL MONTHLY LOADINGS BY RAIL, 1997 – 1999

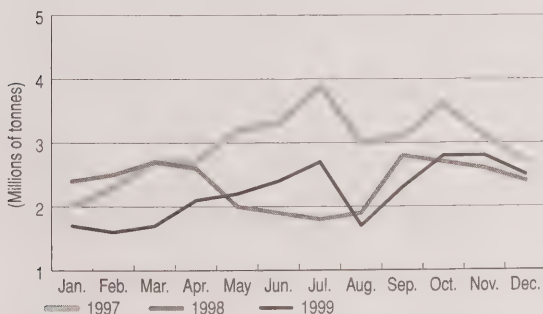


Source: Statistics Canada, Cat. 52-001; Transport Canada

### GRAIN

In 1999, with the continued overabundance of grain on world markets, grain traffic was about six per cent lower than in 1998. Total annual tonnage was 26.5 million tonnes, down from 28 million tonnes in 1998. Figure 12-2 shows three years of grain loadings, including 1997's bumper crop.

FIGURE 12-2: MONTHLY GRAIN LOADINGS BY RAIL, 1997 – 1999



Source: Statistics Canada, Cat. 52-001; Transport Canada

## FOREST PRODUCTS

Forest products had a strong year in 1999, with flows about 7.5 per cent greater than in 1998. This increase reflected a 14 per cent increase in traffic of processed forest products, to 22.5 million tonnes. Flows of unprocessed products remained flat at 16.6 million tonnes. In total, forest products accounted for 15 per cent of total rail traffic in 1999.

## ORES AND MINE PRODUCTS

While iron ore made up 58 per cent of the ore and mine products sector in 1999, shipments were down 17 per cent from 1998 to 32.3 million tonnes, accounting for only 12 per cent of total traffic, compared with 15 per cent in 1998. Softness in world steel markets and decisions by steel makers to draw down their inventories may have contributed to the drop in demand for Canadian iron ore.

Flows of other ores and mine products reached 22.9 million tonnes in 1999, up slightly from the 21.5 million tonnes shipped in 1998. Among these products, gypsum was the lead performer, with 5.1 million tonnes on the rail system, up 53 per cent. Alumina, bauxite and other aluminum ores accounted for 5.2 million tonnes loaded, up 13 per cent.

## FERTILIZERS AND FERTILIZER MATERIALS

In 1999, this sector as a whole generated less traffic than in 1998, but maintained a share of ten per cent of total rail traffic. Potash traffic declined by 0.5 million tonnes in 1999, due to lower production levels and low grain prices, which affected sales negatively. Sulphur and other fertilizer shipments rose by five per cent to 12.5 million tonnes.

Imports of phosphate rock to Alberta via Vancouver dropped off in 1999, as a domestic source was discovered near Kapuskasing, Ontario. There were no phosphate rock loadings recorded until August 1999. Almost 94,000 tonnes moved in the latter part of the year, compared with a total of 1.1 million tonnes in 1998.

## COAL

After ores in aggregate, coal products had the largest share of rail traffic in 1999, with 16.6 per cent of the tonnage. Coal and coke flows increased by 10.5 per cent to 43.3 million tonnes in 1999.

## INDUSTRIAL PRODUCTS

Automobiles and parts, refined petroleum products, chemicals and metals continue to account for an increasing proportion of rail traffic in Canada, making up 14.8 per cent of flows in 1999.



Automotive products accounted for only 13 per cent of the industrial products sector; however, this sub-sector saw the biggest increase in traffic, with 1999 movements reaching 4.9 million tonnes, up 38 per cent from 1998. Flows of ferrous and non-ferrous metals increased by almost three per cent to 9.2 million tonnes. Petroleum and chemical traffic declined by nearly four and six per cent, to 10.9 and 13.5 million tonnes, respectively.

## INTERMODAL

After a lull in growth in 1998, intermodal traffic leapt by 35 per cent in 1999. Container-on-flat-car tonnage rose to 22.1 million tonnes, 36 per cent higher than in the previous year. Trailer-on-flat-car traffic, after a 28 per cent decline in 1998, recovered 16 per cent to 1.6 million tonnes. The

### STAKEHOLDER CONSULTATIONS ON GRAIN TRANSPORTATION SYSTEM RESTRUCTURING

In a May 1999 policy statement, the Minister of Transport announced that the federal government agreed with Justice Estey's vision for the system. At the same time, the Minister appointed Mr. Arthur Kroeger to seek consensus among all major system participants on the changes necessary to implement the 15 point reform framework set out in 1998 by Justice Estey.

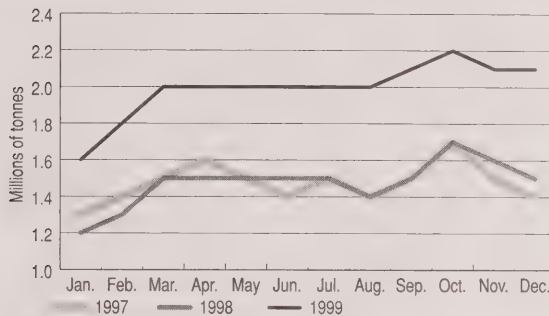
A Steering Committee made up of 14 stakeholder groups managed the process, while 3 Working Groups — Rates and Revenues, Commercial Relations, and Competition and Safeguards — dealt with the technical aspects of implementing each recommendation. Consensus was reached on a number of issues; however, on some important subjects, it was impossible to bridge the divergent views. The following is a summary of the report's conclusions.

- On the legislated ceiling for rail freight rates charged for transporting grain, consensus was reached on many technical details tied to a revenue cap but not on its initial level or on how to treat future railway productivity gains. The Steering Committee concluded that tariff details should:
  - be delimited between shippers and railways;
  - be tied to needs;
  - be distance-related, with exceptions recognizing and encouraging efficiencies;
  - differ with differences in service;
  - be transparent and non-discriminatory without precluding the use of confidential contracts; and
  - permit seasonally and commodity-specific discounting. It also concluded that there was a need for measures to address concerns of captive shippers.
- On the questions of railway competition and safeguards a number of options were developed to be presented to the government. These included:
  - the implementation of an open access plan;
  - enhanced inter-switching and more effective competitive line rates; and
  - an after-negotiations two-tier last resort Final Offer Arbitration process, with a one-arbitrator simple 30-day process for freight rate disputes up to \$750,000 and a one- to three-arbitrator 60-day process for larger disputes.
- With respect to the process for western branch line discontinuance, the following process was proposed: a 12-month notice period, a 60-day period to advertise a sale followed by a negotiation period of up to 6 months and, if unsuccessful, reverting back to the current Canadian Transportation Act procedures. Stakeholders also suggested that the railway abandoning a line in a municipality should pay adjustment assistance to the municipality. Line transfer negotiations between railways and short line/community groups could take place at any time. To enhance branch line transfers, stakeholder's proposals related to several factors:
  - the preparation of a comprehensive set of guidelines by Transport Canada through consultations to facilitate negotiations;
  - the establishment of the net-salvage value of the line at the beginning of the transfer process to expedite the negotiations;
  - a third-party mediation process; and
  - a right of recourse when a railway is not negotiating in good faith.
- For producer cars, the need to keep current legislative provisions was widely accepted, and satisfactory conclusions were reached on a number of technical questions related to the provisions of producer cars in a commercial contract-based system.
- Stakeholders proposed two models for changing the logistics chain, each offering greater scope to market forces.
  1. Under one model, the Canadian Wheat Board (CWB) negotiates directly with railways and terminals for capacity (including volume, service and price), and signs framework agreements with grain companies that include specified incentives and/or penalties for performance. Tenders, performance awards or producer contract sign-ups are then used to allocate sales awards to grain companies to supply CWB requirements. Under this model, the allocation of rail car orders to specific geographic regions is done by the CWB. Terminal capacity and car supply agreements are tied to CWB sales. Concerns raised with this model centred on accountability.
  2. The other model, drawn from Justice Estey's recommendations, assumes the existence of a competitive rail environment. To determine overall capacity requirements and assign responsibility for supply of needed grain by the CWB to the grain companies, which in turn have to contact railways for services, the stakeholders propose an annual meeting be held at the beginning of the crop year. Grain companies use price incentives to attract grain from producers. Concerns with this model centred on the CWB's need to determine rail and terminal capacity to make sales in confidence.
- Lastly, the report recommended that a review and sharing of productivity gains take place after the reform's changes have been implemented.

share of total traffic of this sector rose from 6.9 per cent in 1998 to 9.1 per cent in 1999.

Figure 12-3 shows monthly loadings for intermodal traffic between 1997 and 1999.

FIGURE 12-3: MONTHLY INTERMODAL LOADINGS BY RAIL, 1997 – 1999



Source: Statistics Canada, Rail in Canada, Cat. 52-216; Transport Canada

## TRUCKING TRANSPORTATION

### DOMESTIC VS INTERNATIONAL TRAFFIC

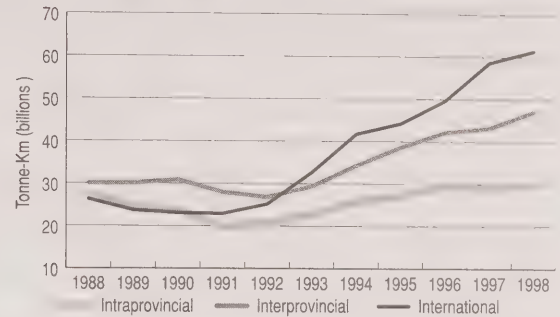
Since 1991, the number of tonne-kilometres attributed to for-hire carriers has increased steadily in both the domestic and international markets. Domestically, tonne-kilometres rose from 47.7 billion to 76.7 billion from 1991 to 1998, an average annual increase of 7.0 per cent. Internationally, tonne-kilometres rose from 22.9 billion to 61.4 billion, an average annual growth of 15.1 per cent over the same period.

In light of these increases, the relative importance of domestic and international markets in the total traffic of Canadian-based for-hire trucking firms has been shifting in the past decade. Since 1991, the domestic share of total tonne-kilometres has decreased by 15 per cent, resulting in a corresponding increase in the international share of total tonne-kilometres.

Figure 12-4 shows the growth in annual truck traffic in tonne-kilometres between 1988 and 1998.

Table 12-2 shows the amount of for-hire truck traffic by sector and province for 1998. Ontario accounted for the largest share of truck traffic in both domestic and international markets, with 51.3 billion tonne-kilometres, or 37.1 per cent of the total tonne-kilometres.

FIGURE 12-4: TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1988 – 1998



Source: Statistics Canada, Trucking in Canada, Cat. 53-222; Transport Canada

TABLE 12-2: FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1998

	(Millions of tonne-kilometres)				
	Intra-provincial	Inter-provincial	Inter-national	Total	Per cent share
Ontario	10,826	14,496	25,934	51,256	37.1
Quebec	6,022	8,260	14,447	28,729	20.8
Alberta	4,933	7,241	7,079	19,253	13.9
Manitoba, Saskatchewan and Territories	2,146	8,800	5,007	15,953	11.6
British Columbia	4,133	5,026	5,000	14,159	10.3
Atlantic Provinces	1,557	3,253	3,929	8,739	6.3
<b>Total:</b>	<b>29,617</b>	<b>47,077</b>	<b>61,396</b>	<b>138,090</b>	<b>100.0</b>

Notes: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers.  
 "International" includes exports and imports; "Interprovincial" are loadings based.  
 "Territories" include Yukon and Northwest Territories.

Source: Statistics Canada, Special Tabulation

Table 12-3 shows the northbound and southbound flow of traffic between US regions and Canadian provinces in 1998. Deliveries to and from the US central states accounted for the largest share of traffic with 22.1 billion tonne-kilometres, or 36.0 per cent of the total tonne-kilometres.

TABLE 12-3: FOR-HIRE TRUCK INTERNATIONAL TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1998

(Millions of tonne-kilometres)					
Province	US Region <sup>1</sup>	Southbound movements "Exports"	Northbound movements "Imports"	Total	Per cent Share
Ontario	US Central	6,942	4,647	11,589	18.9
Ontario	US South	3,487	3,351	6,838	11.1
Prairie Provinces	US Central	3,132	2,958	6,091	9.9
Quebec	US Central	2,794	1,605	4,400	7.2
Quebec	US South	2,546	1,732	4,278	7.0
Quebec	US North-East	2,847	1,410	4,257	6.9
Ontario	US North-East	2,351	1,640	3,991	6.5
Ontario	US West	1,571	1,851	3,422	5.6
British Columbia	US West	1,860	1,329	3,188	5.2
	Sub-total	27,530	20,523	48,053	78.3
Other Movements		8,036	5,307	13,343	21.7
<b>Total</b>		<b>35,567</b>	<b>25,830</b>	<b>61,396</b>	<b>100.0</b>

Note: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers.  
 1 US North-East includes New England and Middle Atlantic states.  
 US Central includes states bordering the Great Lakes and other central states such as North Dakota, South Dakota, Nebraska, Iowa, Kansas and Missouri.  
 US West includes Pacific states and Western Mountain states.

Source: Statistics Canada, Special Tabulation

## TRUCK TRAFFIC BY COMMODITY

In terms of transportation revenues, general freight (primarily manufactured products and fabricated materials) accounted for a significant share of truck traffic in 1998. Domestic traffic in this commodity group generated close to \$2.7 billion in revenues, or 41.5 per cent of all domestic revenues. International traffic generated approximately \$2.2 billion, or 46 per cent of all international revenues. Based on domestic and international traffic combined, the next most important commodities transported were food products, with about \$1.8 billion, or 16.2 per cent of the total, and forest products, with \$1.6 billion, or 14.3 per cent of the total. Together, these three commodities accounted for almost three quarters of the carriers' revenues in 1998.

Table 12-4 shows the revenues of for-hire trucking activity by major commodity group for 1998.

TABLE 12-4: FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1998

Commodities	Domestic		International		Grand Total	
	(Millions)	Per cent	(Millions)	Per cent	(Millions)	Per cent
General Freight	\$2,657.1	41.5	\$2,243.1	46.3	\$4,900.2	43.6
Food Products	1,186.5	18.5	633.2	13.1	1,819.6	16.2
Forest Products	871.2	13.6	735.4	15.2	1,606.6	14.3
Automotive Products	350.5	5.5	561.3	11.6	911.8	8.1
Steel and Alloys	395.8	6.2	359.7	7.4	755.4	6.7
Chemical Products	368.3	5.8	220.3	4.5	588.5	5.2
Petroleum Products	343.6	5.4	42.0	0.9	385.6	3.4
Non-metallic Minerals	205.4	3.2	44.9	0.9	250.3	2.2
Metals / Ores	22.9	0.4	7.3	0.1	30.2	0.3
<b>Total Revenues</b>	<b>\$6,401.2</b>	<b>100.0</b>	<b>\$4,847.2</b>	<b>100.0</b>	<b>\$11,248.4</b>	<b>100.0</b>

Source: Transport Canada; Statistics Canada, Special Tabulation from For-Hire Trucking Survey, Commodity Origin/Destination

In terms of traffic volume measured by tonne-kilometres, general freight accounted for 26.4 billion tonne-kilometres domestically, or 34.5 per cent of all domestic traffic, and 24.3 billion tonne-kilometres to the US and Mexico, or 39.5 per cent of all international traffic. Combined, this represented almost 37 per cent of total tonne-kilometres in 1998.

In aggregate, general freight, food products and forest products accounted for almost 75 per cent of carriers' total tonne-kilometres in 1998. Table 12-5 shows the volume of for-hire trucking traffic by major commodity group for 1998.

Two major sources were responsible for the growth in freight traffic carried by trucks: the general freight sector, where domestic activities not only surpassed transborder volumes in terms of tonne-kilometres, but were also responsible for much of the growth in freight traffic; and

### INTELLIGENT TRANSPORTATION SYSTEMS APPLICATIONS AND THE CANADIAN TRUCKING INDUSTRY

Given the increasing focus on Intelligent Transportation Systems (ITS), Transport Canada launched a study to assess best practices and state-of-the-art applications currently in use in the motor carrier industry. A summary of the study, which was completed in 1999, follows.

ITS can be defined as the application of advanced information processing, communications, sensing and control technologies to improve the way in which ground transportation systems are designed, built, managed and operated.

These technologies are being considered by the motor carrier industry as a way to enhance safety and efficiency of passenger and freight transportation operations, and to promote competitiveness. ITS applications have also been introduced to alleviate problems associated with increased traffic congestion, instead of capital expenditures to expand existing highway infrastructure.

#### Possible Barriers To Deployment of ITS Technologies

Despite carriers' awareness of the benefits of ITS technologies to their operations, a number of impediments exist to broader deployment of ITS.

- **Cost of investment in technology** — Because rapid technological changes make products quickly outdated, products must be sold at prices high enough to cover developmental costs, which deter many carriers from adopting them.
- **Knowledge of ITS** — The lack of knowledge about ITS also impedes investment, and Canada currently lacks the outreach programs that might help increase awareness.
- **Privacy issue** — Trucking companies are concerned about the storage of private and confidential commercial information.
- **Commercial issue** — Suppliers of ITS technology are concerned about protecting their intellectual property rights, as well as their market share.
- **Resistance to change** — Workers often equate automation with a potential loss of jobs, and therefore do not wish to change the way they do business.
- **Standardization** — The lack of standardization and the proprietary nature of some of the technologies and products have made it difficult, if not impossible, for the industry to integrate their company's systems with the in-vehicle devices. Similarly, operational policy and strategies are often developed with little consultation, resulting in individual institutions having similar but different requirements.

#### Current Uses of ITS Technology in Canada

There is a significant degree of adoption of ITS technology in the Canadian trucking industry. It is, however, generally limited to large companies operating a fleet of 100 trucks or more. The driving force behind its use is competitiveness considerations, particularly for carriers that have operations with a North American scope. Furthermore, adopting ITS technology improves their productivity and safety records, giving them a competitive edge in the market. There are several types of ITS applications in use in the Canadian trucking industry.



### INTELLIGENT TRANSPORTATION SYSTEMS APPLICATIONS AND THE CANADIAN TRUCKING INDUSTRY (Continued)

- **Computerized information system** — A high percentage of Canadian carriers use computerized management information systems to manage their operations.
- **On-board driver monitoring system** — This is an on-board computer with a serial PC interface used to transfer data to the fleet management computer to assess driver and vehicle performance.
- **Satellite tracking** — This is an on-board vehicle device that sends a periodic signal to the satellite. The communication satellite then establishes the approximate location of the vehicle, relaying this information to the dispatch office's tracking software.
- **Global Positioning System (GPS)** — With a GPS, the vehicle's on-board receiver triangulates its position based on signals received from three or more GPS transmitting satellites. The on-board computer then transmits the vehicle location to the dispatcher by communication satellite or other means. The GPS system is also being used to keep track of trailers. Functions such as doors opening or temperature of cargo can also be monitored in real time.
- **Digital pager systems** — Text messages can be sent directly to the driver using the satellite system or the cellular network.

#### *Opportunities for ITS in the Canadian Motor Carrier Industry*

Implementing ITS technologies on a national scale requires the full commitment of all levels of government and the trucking industry, and close co-operation between the public and the private sectors. Building on the experience and successes of the pilot projects, ITS deployment has been expanding in North America and can be enhanced to include additional features for future ITS applications in the Canadian motor carrier industry.

- **Roadside CVO stations** — The number of weigh stations capable of electronic bypass could be increased. The number of trucks to be equipped with transponders for toll payment, weigh station bypass and customs clearance are expected to increase significantly over the next few years.
- **Commercial fleet management** — The use of on-board computers could be extended to upload the driver routing slip, customer list, billing information, etc. Technologies used for vehicle tracking and communications could provide a basis for implementing "Mayday" capabilities in emergency situations.
- **Enroute driver information** — Transponders could interface with other on-board devices for display functions to display information to the driver, such as weather, traffic incidents, road sign information, etc.
- **On-board safety monitoring** — Safety systems could monitor the safety status for the vehicle (brakes, lights, tires, air pressure, speed, steering and electrical system), the driver (hours of service, alertness) and cargo (unsafe conditions relating to cargo carried in the vehicle).
- **Commercial vehicle administrative processes** — The carriers could electronically capture information on mileage, fuel purchased, and trip and vehicle data by province (and state), including licences, registrations, operating authority, leasing, insurance, permits, mileage and fuel tax reporting, safety records, audits and credentials.
- **Route guidance** — In-vehicle navigation systems using GPS will be an option for most trucks within a few years, providing vehicle location, mapping, traveller route planning and route guidance.
- **Dangerous goods incident response** — Transponders could enable the tracking of the movement of dangerous goods and provide truck-specific cargo information to enhance the response to dangerous goods incidents.

#### *Conclusions*

Commercial vehicle operators and their different agencies have a common interest in deploying ITS applications. However, a number of hurdles have to be overcome to achieve success. The perceived barriers from the motor carrier industry perspective can be addressed by the following types of action.

- **Education** — Increase awareness of the associated benefits of ITS technologies by promoting it through trucking associations and ITS Canada, focused government information campaigns (through vehicle registration and truck driver permit renewals, at roadside inspection stations, border crossings, etc.).
- **Regulatory** — Set guidelines to protect privacy and intellectual property.
- **National ITS Architecture** — Develop a national ITS architecture for integrating various commercial vehicle applications compatible with the US architecture, but taking into consideration the unique needs of Canada.
- **Public/Private-Sector Participation** — Foster co-operation and involvement of all sectors to better balance investments and increase market stimulation.
- **Harmonized Standards** — Develop North American standards and achieve true inter-operability.



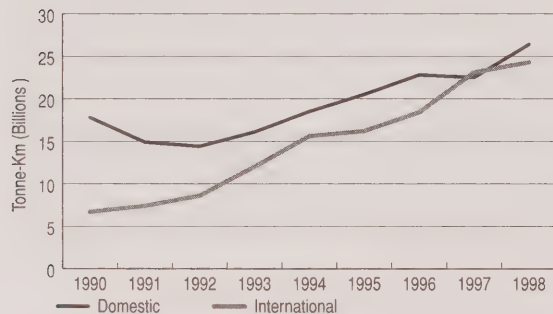
**TABLE 12-5: FOR-HIRE TRUCKING ACTIVITY TRAFFIC BY COMMODITY GROUP, 1998**

Commodities	(Million tonne-kilometres)					
	Domestic		International		Grand Totals	
	Total	Per cent	Total	Per cent	Total	Per cent
General Freight	26,430.2	34.5	24,270.4	39.5	50,700.7	36.7
Food Products	15,063.6	19.6	9,983.9	16.3	25,047.4	18.1
Forest Products	14,116.1	18.4	13,552.2	22.1	27,668.3	20.0
Automotive Products	1,441.5	1.9	4,380.4	7.1	5,821.9	4.2
Steel and Alloys	6,301.3	8.2	5,044.1	8.2	11,345.5	8.2
Chemical Products	4,177.1	5.4	2,515.4	4.1	6,692.5	4.8
Petroleum Products	5,418.5	7.1	633.2	1.0	6,051.7	4.4
Non-metallic Minerals	3,220.4	4.2	889.0	1.4	4,109.4	3.0
Metals/Ores	525.0	0.7	127.7	0.2	652.7	0.5
<b>Total Tonne-kilometres</b>	<b>76,693.7</b>	<b>100.0</b>	<b>61,396.4</b>	<b>100.0</b>	<b>138,090.1</b>	<b>100.0</b>

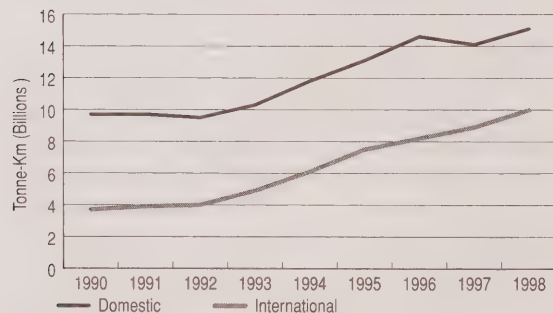
Source: Transport Canada; Statistics Canada, Special Tabulation from For-Hire Trucking Survey, Commodity Origin/Destination

the food products sector, which enjoyed significant growth in both domestic and transborder flows.

Figures 12-5 and 12-6 compare domestic and international for-hire truck traffic for these two important commodity groups from 1990 to 1998.

**FIGURE 12-5: DOMESTIC VS INTERNATIONAL FOR-HIRE GENERAL FREIGHT TRAFFIC, 1990 - 1998**

Source: Transport Canada based on Statistics Canada data

**FIGURE 12-6: DOMESTIC VS INTERNATIONAL FOR-HIRE FOOD PRODUCTS TRAFFIC, 1990 - 1998**

Source: Transport Canada based on Statistics Canada data, For-Hire Trucking, Survey Commodity Origin-Destination

## TRUCK FLEET

Class 8 heavy trucks include those vehicles with a gross vehicle weight of 15,000 kilograms or more. There was a total of 262,226 Class 8 trucks registered across the country in 1999. To that figure must be added an additional 386,804 "heavy vehicles," which include those vehicles used for picking up and delivering goods and that weigh more than 10,000 kilograms. Three provinces, Ontario, Quebec and Alberta, accounted for 74 per cent of all Class 8 trucks registered in Canada in 1999, and 63 per cent of all registered heavy vehicles.

**TABLE 12-6: REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCE/TERRITORY, 1999**

	Heavy vehicles	Class 8 Trucks	Total	Per cent of all registered vehicles	Total registered vehicles
Newfoundland	4,056	2,873	6,929	2.8	248,520
Prince Edward Island	2,094	2,515	4,609	6.1	75,260
Nova Scotia	9,453	6,838	16,291	3.1	517,298
New Brunswick	9,417	4,520	13,937	3.2	438,232
Quebec	57,909	32,770	90,679	2.3	3,951,026
Ontario	77,325	98,608	175,933	2.8	6,374,185
Manitoba	9,889	11,053	20,942	3.5	590,866
Saskatchewan	47,481	22,149	69,630	10.1	689,448
Alberta	109,683	61,907	171,590	8.3	2,061,250
British Columbia	57,415	17,286	74,701	3.3	2,268,585
Yukon	1,316	925	2,241	9.0	24,962
Northwest Territories	504	682	1,186	6.5	18,147
Nunavut	262	101	363	14.6	2,479
<b>Total</b>	<b>386,804</b>	<b>262,226</b>	<b>649,030</b>	<b>3.8</b>	<b>17,260,258</b>

Source: Provincial/Territorial Registration Files submitted to Statistics Canada for the Canadian Vehicle Survey

## TRUCK SALES

In 1999, there were 30,984 new Class 8 trucks sold in Canada, establishing a new record for sales of such vehicles. These new truck purchases reflect a pent-up demand following the deferred fleet replacement during the 1990-1992 recession, as well as strong growth in the demand for truck freight services since 1993. Table 12-7 compares the sale of Class 8 trucks by province from 1997 to 1999.

**TABLE 12-7: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1997 to 1999**

	1997 Sales	Per cent of total	1998 Sales	Per cent of total	1999 Sales	Per cent of total
Newfoundland	157	0.6	129	0.4	150	0.5
Prince Edward Island	32	0.1	46	0.2	45	0.1
Nova Scotia	474	1.7	560	1.9	632	2.0
New Brunswick	1,130	4.2	1,282	4.4	1,437	4.6
Quebec	5,255	19.3	5,682	19.5	6,782	21.9
Ontario	9,783	35.9	11,947	41.1	13,124	42.4
Manitoba	1,491	5.5	1,615	5.6	1,674	5.4
Saskatchewan	1,315	4.8	1,168	4.0	1,107	3.6
Alberta	5,185	19.0	4,402	15.1	3,814	12.3
British Columbia	2,401	8.8	2,265	7.8	2,219	7.2
<b>Canada</b>	<b>27,223</b>	<b>100.0</b>	<b>29,096</b>	<b>100.0</b>	<b>30,984</b>	<b>100.0</b>

Source: Canadian Vehicle Manufacturers' Association

Sales of Class 8 trucks were 6.5 per cent higher in 1999 than in 1998. A number of factors, favourable to heavy truck sales, that were present in 1998 — strong manufacturing output, relatively favourable interest rates, controlled inflation and increased consumer spending — were also present in 1999, all pointing to a strong demand for truck freight transport.

When Canadian sales of Class 8 trucks in a given year are related to the number of registered Class 8 trucks, it gives an idea of the importance of the replacement rate of vehicles in the trucking industry (Table 12-8). Replacement rates vary from one region to another, a situation that would have to be analysed at a micro-level to determine whether or not it is indicative of an appropriate or inappropriate rate of replacement. In Canada as a whole, more than 11 per cent of registered Class 8 trucks in operation during 1999 were new trucks.

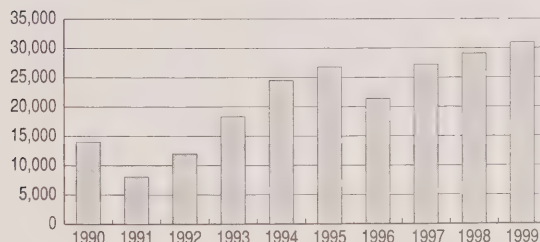
**TABLE 12-8: REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCE/TERRITORY, 1999**

	Sales of Class 8	Registered Class 8	Sales/ Registration (Per cent)
Newfoundland	150	2,873	5.2
Prince Edward Island	45	2,515	1.8
Nova Scotia	632	6,838	9.2
New Brunswick	1,437	4,520	31.8
Quebec	6,782	32,770	20.7
Ontario	13,124	98,608	13.3
Manitoba	1,674	11,053	15.1
Saskatchewan	1,107	22,149	5.0
Alberta	3,814	61,907	6.2
British Columbia	2,219	17,286	12.8
<b>Total</b>	<b>30,984</b>	<b>260,519</b>	<b>11.9</b>

Sources: Provincial/Territorial Registration Files submitted to Statistics Canada for the Canadian Vehicle Survey; Canadian Vehicle Manufacturers' Association

Figure 12-7 shows the annual sale of Class 8 trucks in Canada between 1990 and 1999.

**FIGURE 12-7: ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 1999**



Source: Canadian Vehicle Manufacturers' Association

## MARITIME TRANSPORTATION

Canada's maritime freight traffic has three components: domestic flows,<sup>1</sup> transborder trade with the US, and "other" international (deep-sea, or overseas) traffic.<sup>2</sup> Marine freight traffic totalled 327.9 million tonnes<sup>3</sup> in 1998, a 0.5 per cent decrease from 1997. Domestic flows, also called coasting trade, accounted for 48.3 million tonnes, 3.4 per cent more than the 46.7 million tonnes moved in 1997. Canadian-flag vessels carried 47.3 million tonnes, or 98 per cent, of this total, which means that in 1998, foreign ships handled only two per cent of Canada's domestic marine shipping activities.

Transborder traffic between Canada and the US totalled 100.1 million tonnes, a 6.2 per cent increase over 1997 volumes. Canadian-flag vessels were active in the transborder trade, carrying 56.4 million tonnes, or 56.3 per cent of the total traffic. Overseas traffic decreased by five per cent in 1998, to 179.5 million tonnes. Canadian-flag vessels carried only 0.2 per cent of this traffic. Lower shipments of bulk cargo to Asian ports resulting from the Asian financial crisis were only partially offset by an increase in cargo received from these ports.

From 1988 to 1998, total marine flows fluctuated from year to year but showed a slightly increasing trend overall. Domestic traffic flows declined from a peak of 70 million tonnes in 1988 to 48.3 million tonnes in 1998, a 31 per cent decline.<sup>4</sup> Transborder (Canada-US) traffic in 1998 exceeded the previous high recorded in 1997 by almost six per cent. Since 1988, transborder tonnage increased by 19 per cent. Overseas (other international) traffic grew eight per cent between 1988 and 1998. Overseas volumes were five per cent lower in 1998 than in 1997.

Figure 12-8 and Table 12-9 show Canada's marine traffic statistics, by sector, from 1986 to 1998.

Table 12-10 shows Canada's flag share of Canadian waterborne trade in 1998.

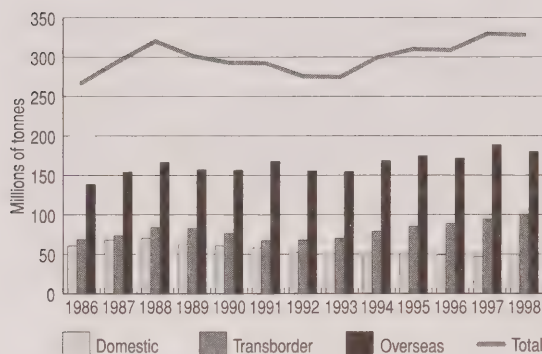
1 Maritime traffic that originates from and is destined to a Canadian port; flows count traffic volume only once, in contrast to port loadings and unloadings, for which, in the case of domestic traffic, the same volumes get counted twice.

2 Traffic to and from foreign countries other than the US.

3 Based on traffic flows rather than tonnage handled at Canadian ports (domestic volumes are not double counted).

4 Primarily reflecting a shift in grain traffic from Thunder Bay to West Coast ports.

FIGURE 12-8: CANADA'S MARINE TRAFFIC FLOWS BY SECTOR, 1986 - 1998



Source: Statistics Canada, Cat. 54-205

TABLE 12-9: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 - 1998

	(Millions of tonnes)			Total Flows	Total Handled
	Domestic Flows	Transborder	Overseas		
1986	60.5	68.2	138.4	267.1	327.6
1987	67.6	73.2	153.8	294.6	362.2
1988	70.0	83.8	166.2	320.0	390.0
1989	62.0	82.7	156.7	301.4	363.4
1990	60.4	76.2	156.1	292.7	353.1
1991	57.9	67.0	167.2	292.1	350.0
1992	52.3	67.9	155.3	275.5	327.8
1993	50.4	69.9	154.2	274.5	324.9
1994	52.2	78.8	168.1	299.1	351.3
1995	50.4	85.2	174.5	310.1	360.5
1996	48.8	88.5	171.4	308.7	357.5
1997	46.7	94.3	188.4	329.4	376.1
1998	48.3	100.1	179.5	327.9	376.2

Source: Statistics Canada, Cat. 54-205

TABLE 12-10: CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1998

	(Millions of tonnes)						Total Traffic
	Canadian Flag	Per cent	US Flag	Per cent	Foreign Flag	Per cent	
Domestic	47.3	98.0	0.1	0.2	0.9	1.8	48.3
Canada / US	56.4	56.3	7.9	7.9	35.8	35.8	100.1
Deep-Sea	0.4	0.2	0.5	0.3	178.6	99.5	179.5
<b>Total</b>	<b>104.1</b>	<b>31.7</b>	<b>8.5</b>	<b>2.6</b>	<b>215.3</b>	<b>65.7</b>	<b>327.9</b>

Source: Statistics Canada and Transport Canada

## COASTING TRADE ACT

The *Coasting Trade Act* of 1992 restricts to Canadian-registered duty-free ships the transportation of cargo and passengers, as well as all commercial marine-related activities in Canadian waters. The Act also extends this reservation to Canada's continental shelf for activities related to the exploration and exploitation of non-living natural resources. It allows temporary licences to be issued to foreign-registered vessels in domestic operations, when no Canadian ship is available or capable of providing a particular service.

Canada Customs and Revenue Agency's regional custom's offices are responsible for the administration and collection of duties associated with obtaining a coasting trade licence. Paid monthly, these duties are 1/120<sup>th</sup> of 25 per cent of the declared fair market value of the foreign ship while involved in a coasting trade activity. The only exception to this rule (which came into effect in January 1998 as a result of the Canada-US Free Trade Agreement) is that no duty is payable on US-registered ships.

The Canadian Transportation Agency determines whether or not a Canadian-registered, duty paid ship is available to perform a particular service, while the Minister of Transport remains responsible for enforcing the Act.

## DOMESTIC FREIGHT TRAFFIC

Domestic cargo is loaded and unloaded at Canadian ports and therefore handled twice by the port system. Domestic cargo rebounded from last year's record low, rising 3.4 per cent to 96.6 million tonnes. Increased shipments of iron ore, crude petroleum and fuel oil offset a significant decline in wheat shipments. Domestic marine cargo has been steadily decreasing since its peak in 1988, when ports handled 139.9 million tonnes. This decline is due partly to a change in the direction of Canada's international trade. In the 1980s, many commodities, such as grain, were carried as domestic cargo via the Great Lakes-St. Lawrence Seaway system and then transferred at Canada's eastern ports for shipment overseas. These commodities are increasingly being carried by rail to Canada's western ports for shipment overseas.

Preliminary data for domestic tonnage handled over the first two quarters of 1999 indicate an eight per cent increase over the same period in 1998, from 18.4 million tonnes to 19.9 million tonnes.

Table 12-11 shows flows of domestic marine traffic by region in 1998.



**TABLE 12-11: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1998**

(Thousands of tonnes)

Region of Origin (Loadings)	----- Region of Destination (Unloadings) -----				All Regions
	Atlantic	St. Lawrence	Great Lakes	Pacific	
Atlantic	4,410	2,882	332	30	7,654
St. Lawrence	1,046	6,308	6,542	0	13,896
Great Lakes	229	5,538	8,657	0	14,424
Pacific	3	0	0	12,314	12,317
<b>All Regions</b>	<b>5,688</b>	<b>14,728</b>	<b>15,531</b>	<b>12,344</b>	<b>48,291</b>

Source: Statistics Canada, Cat. 54-205

The bulk of domestic traffic is concentrated in the Great Lakes–St. Lawrence Seaway system. These ports handled 58.6 million tonnes (loadings and unloadings) in 1998, or 60.7 per cent of the total domestic tonnage. The Pacific region ranked second, handling 24.7 million tonnes, or 25.5 per cent of the total. All domestic cargo handled by Pacific ports stayed within that region. In 1998, Pacific coast ports handled 0.6 million tonnes more cargo than in 1997. Ports in the Atlantic region handled 13.3 million tonnes of domestic cargo in 1998, 21 per cent more than in 1997. Crude petroleum shipments drove the increase, with the first full year of production of the oil field on the Grand Banks.

Increasing volumes of petroleum products (26.5 per cent) and iron ore (22.2 per cent) were the significant contributors to the increase in domestic traffic within Canada. The decline in grain shipments, however, resulted in a 32 per cent drop in cargo, down to 5.2 million tonnes in 1998.

Across Canada, the primary commodities handled in the domestic trade in 1998 were:

- iron ore and concentrates (14.0 million tonnes, up 22.2 per cent from 1997)
- pulpwood and chips (12.4 million tonnes, up 4.3 per cent)
- fuel oil (9.7 million tonnes, up 9.5 per cent)
- stone and limestone (9.3 million tonnes, up 2.7 per cent)
- wheat (9.0 million tonnes, down 36.6 per cent).

These five commodities accounted for 56.3 per cent of all domestic tonnage handled at Canadian ports in 1998.

In 1998, just over two per cent of Canada's domestic marine traffic was handled by foreign-flag ships, down from 2.6 per cent in 1997. Historically, foreign-flag vessels have accounted for less than two per cent of the total domestic traffic. During 1999, Revenue Canada received 117 applications for coasting trade licences, up from 99 in 1998. Of these, 108 have been granted. The greatest proportion of licences was granted to US-flag ships, while the Panamanian-flag ships were second.

A significant number of coasting trade applications in 1999 were again related to Canada's offshore oil and gas activity: the movement of products from the Hibernia and Cahasset oil development fields, as well as activities associated with the exploration and development of the Sable Island gas fields. In 1999, 17 licences were granted for seismic research ships, operating mainly on the east coast.

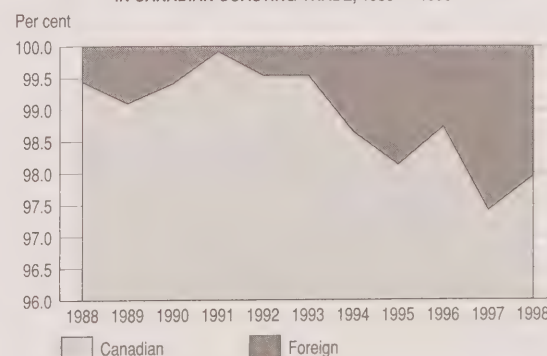
Table 12-12 shows both the percentage and actual total cargo tonnage carried by foreign-registered ships involved in Canadian domestic shipping between 1988 and 1998.

**TABLE 12-12: SHARE OF TONNAGE CARRIED BY FOREIGN FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 – 1998**

Year	Canadian	Per cent	Foreign	Per cent	Total
1988	69,584,300	99.44	389,200	0.56	69,973,500
1989	61,455,700	99.10	560,100	0.90	62,015,800
1990	60,005,700	99.41	354,300	0.59	60,360,000
1991	57,862,300	99.92	48,400	0.08	57,910,700
1992	52,021,600	99.54	240,200	0.46	52,261,800
1993	49,744,300	99.54	231,300	0.46	49,975,600
1994	51,474,100	98.65	703,800	1.35	52,177,900
1995	49,552,400	98.13	945,400	1.87	50,497,800
1996	48,377,762	98.73	623,384	1.27	49,001,146
1997	45,431,820	97.41	1,208,017	2.59	46,639,837
1998	47,301,104	97.93	998,994	2.07	48,300,098

Source: Transport Canada, from data supplied by Statistics Canada

Figure 12-9 indicates the percentage of total cargo carried by foreign-flag ships involved in Canadian domestic shipping from 1988 to 1998.

**FIGURE 12-9: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 – 1998**

Source: Transport Canada from data supplied by Statistics Canada



## INTERNATIONAL FREIGHT TRAFFIC

The 279.6 million tonnes of international cargo volume handled in 1998 was 1.1 per cent less than the record quantity handled during 1997. Of all the international tonnage handled at Canadian ports, 64.1 per cent is export-oriented (including in-transit and re-export traffic). Canada's main deep-sea trading partners — Japan, China, South Korea, the United Kingdom and other western European nations — together accounted for over 60 per cent of total Canadian international marine traffic (exports and imports) in 1998.

According to international trade data, the value of Canadian international marine trade in 1998 was in the order of \$79.7 billion (excluding shipments via US ports), 5.2 per cent less than in 1997. Marine exports were valued at \$40.9 billion and imports at \$38.8 billion. The value of exports decreased by 10.9 per cent, notably with reduced cargoes bound for Asia and Oceania, the Middle East, and South America, while the value of imports increased by two per cent.

Table 12-13 shows the value of the marine share of Canada's international trade in 1998.

**TABLE 12-13: VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1998**

	(Billions of dollars)		
	Marine	All Modes	Marine (Per cent)
<b>Transborder</b>			
Exports <sup>1</sup>	6.2	269.9	2.3
Imports	3.1	203.6	1.5
Total US	9.4	473.5	2.0
<b>Other Countries</b>			
Exports <sup>1</sup>	34.7	48.6	71.4
Imports	35.6	95.0	37.5
Total other	70.3	143.6	49.0

<sup>1</sup> Including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

For more detailed information on Canada's trade, see Chapter 8, *Transportation and Trade*.

### Conference/Non-conference Market Shares

Shipping lines offering scheduled liner services can operate either as a member line of a shipping conference or as an independent (non-conference) line. Non-conference traffic has grown consistently in recent years, both in absolute terms and as a percentage of total liner traffic.

Conference traffic was relatively static between 1994 and 1997, but was down somewhat in 1998. The Asia North America Eastbound Rate Agreement (ANERA) dissolved late in 1996. Several other conferences have been dissolved during 1999, including the Canada Westbound Rate Agreement. The decline in conference power on many routes has resulted in a substantial increase in market share for independent lines, particularly in 1998. If non-conference US origin/destination transshipped traffic were taken into account, the non-conference share would be even more dominant.<sup>5</sup>

Table 12-14 compares the conference and non-conference shares of the Canadian liner trade between 1994 and 1998.

**TABLE 12-14: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 – 1998**

	(Millions of tonnes)				
	1994	1995	1996	1997	1998
<b>Conference<sup>1</sup></b>					
Exports	5.6	5.6	5.9	5.9	5.4
Imports	5.0	4.4	4.7	4.3	4.3
Total	10.6	10.0	10.6	10.2	9.7
<b>Non-conference</b>					
Exports	5.3	6.5	6.8	6.5	8.2
Imports	3.6	3.6	3.7	5.3	6.6
Total	8.9	10.0	10.5	11.8	14.8

Source: Statistics Canada, International Database; Transport Canada.

The breakdown of liner traffic by foreign region of origin/destination is also helpful to illustrate the relative shares of conference and non-conference operators on different routes. Table 12-15 compares conference and non-conference liner traffic by region for 1998.

**TABLE 12-15: LINER TRAFFIC BY REGION, 1998**

	(Millions of tonnes)				
	Liner Imports		Liner Exports		
Region	Conference	Non-conference	Conference	Non-conference	Total
Europe	4.1	2.5	3.9	1.6	12.1
Asia	0.2	2.5	1.5	4.4	8.6
Central America	—	0.4	—	0.6	1.0
South America	—	0.5	—	0.4	0.9
North America	—	0.2	—	0.4	0.6
Middle East	—	0.1	—	0.4	0.5
Oceania	—	0.2	—	0.2	0.4
Africa	—	0.2	—	0.2	0.4
<b>Total</b>	<b>4.3</b>	<b>6.6</b>	<b>5.4</b>	<b>8.2</b>	<b>24.5</b>

Note: — means "Nil"

Source: Statistics Canada, International Database; and Transport Canada.

<sup>5</sup> It is important to note that the data in Tables 12-15 and 12-16 are not adjusted for US transshipments moving through Canadian ports. Much of this traffic moves on conference vessels but at non-conference rates. The route that is likely most affected is between Europe and Canada. The Port of Montreal estimates that approximately 50 per cent of its liner traffic originates in, or is destined for, the US. This would, of course, affect the balance between conference/non-conference traffic further in favour of independent operators.

## Marine Traffic by Commodity

According to a recent Organization for Economic Co-operation and Development (OECD) document,<sup>6</sup> total seaborne trade in the main bulk commodities (coal, iron ore, grain, bauxite, alumina and phosphate) increased continuously during the last decade and reached a peak of 1.2 billion tonnes in 1997, up by 33 per cent over the 1987 total. Nevertheless, over the same period, dry bulk carrier freight rates exhibited volatility and rates in many trade lanes were lower at the end of the period. For 1998, a United Nations report<sup>7</sup> indicates that the dry bulk market freight rates were at significantly lower rates than the year before. This is mainly attributed to the Asian financial crisis.

As in past years, in terms of the type of cargo carried, conference operators tend to concentrate almost exclusively on containerized traffic, with 9.5 million tonnes out of the total 9.7 million tonnes they carried moving in containers. Non-conference traffic is also characterized by a large percentage of cargo in containers (69 per cent), but includes significant amounts of general cargo and neo-bulk traffic as well.

## CANADA-US TRANSBORDER FREIGHT TRAFFIC

Canada's marine traffic with the US increased by 19 per cent between 1988 and 1998, fuelled by both exports and imports. In 1998, transborder traffic reached a peak of 100.1 million tonnes, up 6.2 per cent from 1997. In 1998, exports (loadings to US destinations)<sup>8</sup> led the slight growth (3.5 per cent) in marine traffic between the two nations. Also in 1998, imports (unloadings) were the most dynamic, increasing 10.2 percent to 41.2 million tonnes, compared with 37.4 million tonnes recorded over the same period in 1997.

Preliminary data for the first two quarters of 1999 indicate that this upward trend continued. Transborder tonnage of 42.3 million tonnes was slightly higher (1.3 per cent) than the 41.8 million tonnes shipped over the same period in 1998.

Table 12-16 shows Canada's maritime trade with the US from 1986 to 1998. Figure 12-10 shows Canada's Maritime traffic with the US from 1986 to 1998.

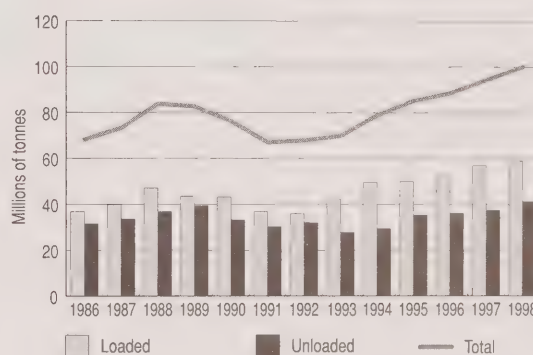
Marine traffic with the US was valued at \$9.4 billion in 1998, driven by exports of \$6.2 billion. This value, however, represented only two per cent of total Canada-US trade. The bulk of the traffic was handled by surface

TABLE 12-16: CANADA'S MARITIME TRADE WITH THE US, 1986 - 1998

	(Millions of tonnes)		
	Loaded	Unloaded	Total
1986	36.8	31.4	68.2
1987	39.8	33.5	73.3
1988	47.0	36.8	83.8
1989	43.4	39.3	82.7
1990	43.1	33.2	76.3
1991	36.8	30.2	67.0
1992	35.9	32.0	67.9
1993	42.1	27.8	69.9
1994	49.5	29.3	78.8
1995	49.9	35.3	85.2
1996	52.4	36.1	88.5
1997	56.9	37.4	94.3
1998	58.9	41.2	100.1

Source: Statistics Canada, Cat. 54-205

FIGURE 12-10: CANADA'S MARITIME TRAFFIC WITH THE US, 1986 - 1998



Source: Statistics Canada, Cat. 54-205

transport modes, such as trucking and rail. For further details on the value of Canada's traffic with the US, see Chapter 8, *Transportation and Trade*.

## Exports

In 1998, loadings at Canadian ports destined to the US amounted to 59 million tonnes, up 3.5 per cent from 1997. Seven commodities accounted for 80 per cent of marine export volumes. They were (in million tonnes) iron ore (9.8), crude petroleum (8.6), gypsum (6.2), stone and limestone (6.0), fuel oil (5.5), salt (4.2) and gasoline (3.9).

The amounts of major commodities exported to the US in 1998 differed significantly from those exported in 1997. Volumes of salt exports jumped by 19 per cent, while crude petroleum and stone and limestone increased by

6 Discussion Document on Regulatory Reform in International Maritime Transport, Maritime Transport Committee of the OECD, May 1999.

7 Review of Maritime Transport 1999, United Nations Conference on Trade and Development, 1999.

8 Including in-transit and transshipment cargo.

6.7 and 15.6 per cent, respectively. Gypsum shipments were stable, while exports of iron ore and gasoline decreased by 8.8 and 2.7 per cent, respectively.

There were two main flow corridors in 1998: from the Canadian Atlantic to the US Atlantic, with 24.6 million tonnes (42 per cent of total loadings to the US), and from the Canadian Great Lakes to US Great Lakes ports, with 13.3 million tonnes (23 per cent of total loadings).

Table 12-17 details traffic flows from Canada to the US in 1998.

**TABLE 12-17: CANADA'S MARINE TRAFFIC TO THE US, 1998**  
(Millions of tonnes)

Canadian Region of Origin	US Region of Destination			Total
	US Atlantic	US Great Lakes	US Pacific	
Atlantic	24.6	0.0	0.2	24.7
St. Lawrence	5.6	6.8	0.1	12.4
Great Lakes	0.0	13.3	—	13.4
Pacific	0.8	0.1	7.5	8.4
<b>Total</b>	<b>31.0</b>	<b>20.2</b>	<b>7.7</b>	<b>58.9</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

## Imports

Unloadings at Canadian ports of shipments originating in the US rose from 37.4 million tonnes in 1997 to 41.2 million tonnes in 1998, a ten per cent increase. Significant commodities, in terms of volume, included (in million tonnes) coal (17.7), iron ore (6.4), stone and limestone (3.0), fuel oil (2.4), other petroleum products (1.4) and alumina and bauxite (1.2). Together, these six commodities accounted for 78 per cent of all marine imports from the US.

As with exports, there was considerable instability in the volumes of marine imports from the US compared with 1997 volumes. Imports of coal and alumina and bauxite were up 29.4 and 14.1 per cent, respectively. Other petroleum products showed a 9.0 per cent drop. Volumes of stone and limestone and iron ore decreased by 5.2 and 1.3 per cent, respectively.

The bulk of marine imports from the United States, 76.2 per cent of the total volume, originated at ports on the Great Lakes. Ports along the US Atlantic and Gulf accounted for 15.5 per cent, with US Pacific ports making up the remainder of 8.3 per cent.

Table 12-18 shows the traffic flow from the US to Canadian ports in 1998.

**TABLE 12-18: CANADA'S MARINE TRAFFIC FROM THE US, 1998**  
(Millions of tonnes)

Canadian Region of Destination	US Region of Origin			Total
	US Atlantic	US Great Lakes	US Pacific	
Atlantic	2.5	0.0	0.1	2.6
St. Lawrence	3.4	3.5	0.3	7.1
Great Lakes	0.2	28.0	0.0	28.2
Pacific	0.3	0.0	2.9	3.2
<b>Total</b>	<b>6.4</b>	<b>31.4</b>	<b>3.4</b>	<b>41.2</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

## OVERSEAS FREIGHT TRAFFIC

In 1998, Canadian maritime trade with overseas countries (excluding the US) totalled 179.5 million tonnes, down 4.7 per cent from the 1997 volume of 188.4 million tonnes. This trade has been strongly export-oriented, with the loading share oscillating between 67 and 79 per cent over the last ten years. About 62 per cent of total loadings to overseas countries took place at west coast ports. In contrast, 89 per cent of overseas imports were unloaded at Canada's east coast ports.

Table 12-19 shows Canada's maritime overseas trade from 1986 to 1998.

**TABLE 12-19: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1998**  
(Millions of tonnes)

	Loaded	Unloaded	Total
1986	107.8	30.6	138.4
1987	119.2	34.6	153.8
1988	124.1	42.1	166.2
1989	115.7	41.0	156.7
1990	116.0	40.1	156.1
1991	131.3	35.9	167.2
1992	118.0	37.3	155.3
1993	110.4	43.8	154.2
1994	120.5	47.6	168.1
1995	126.6	47.9	174.5
1996	121.9	49.5	171.4
1997	131.1	57.3	188.4
1998	120.2	59.3	179.5

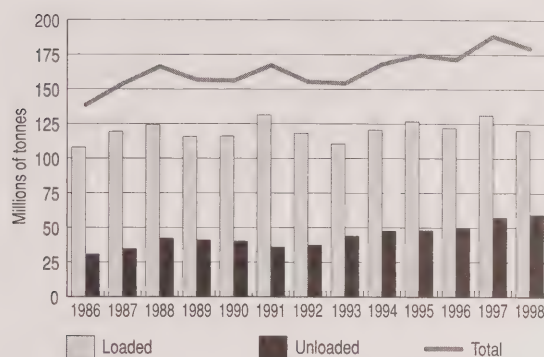
Source: Statistics Canada, Cat. 54-205; Transport Canada

Figure 12-11 shows Canada's maritime overseas trade from 1986 to 1998.

Preliminary data for the first two quarters of 1999 indicate 4.6 per cent less tonnage handled in the Canada-overseas maritime trades than in the same period of 1998. Loadings show a 7.8 per cent decline in volumes, largely due to the economic crisis that unfolded in many Pacific Rim and other Asian countries. This crisis resulted in depressed demand in Asia for Canadian bulk commodities such as grain, coal, iron ore and potash.



FIGURE 12-11: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1998



Source: Statistics Canada, Cat. 54-205; Transport Canada

Data indicate a two per cent increase in unloadings over 1998 volumes.

In 1998, Canadian marine trade with overseas countries (excluding the US) was valued at \$70.3 billion, with exports estimated at \$34.7 billion and imports at \$35.6 billion. In terms of value, marine transport accounted for 49 per cent of all overseas trade and was the dominant mode for shipping overseas freight.

For more detailed information on Canada's offshore trade, see Chapter 8, *Transportation and Trade*.

## Exports

In 1998, Canadian marine loadings destined for countries other than the US generated 120.2 million tonnes of traffic, down more than eight per cent from 1997 levels. The major commodities shipped from Canada were (in million tonnes) coal (32.7), iron ore (21.0), wheat (14.1), containerized freight (11.4), woodpulp (5.7), sulphur (5.2) and potash (4.3). Nine per cent of outbound loadings were containerized.

Most of the major commodities loaded in 1998 declined significantly from 1997 levels. Wheat and potash were both down by more than 20 per cent. Coal, iron ore and sulphur shipments were down by 8.4, 5.1, and 5.8 per cent, respectively. Only containerized freight volumes showed an increase, of 7.3 per cent.

In 1998, over 61 per cent of Canadian loadings for overseas destinations came from western Canadian ports, while ports along the Great Lakes–St. Lawrence Seaway system handled most of the eastern share. Predictably, the direction of trade was highly polarized, with the western ports dominating the Asia and Oceania trade

routes, while the eastern ports handled a high proportion of tonnage shipped to Europe.

Table 12-20 shows Canada's maritime traffic to overseas in 1998.

TABLE 12-20: CANADA'S MARINE TRAFFIC TO OVERSEAS, 1998

(Millions of tonnes)

Foreign Region of Destination	Canadian Region of Origin		Total
	Eastern ports	Western ports	
Asia and Oceania	6.4	51.7	58.1
Europe	30.8	9.0	39.8
South and Central America	5.2	8.2	13.5
Middle East and Africa	3.7	5.0	8.7
<b>Total</b>	<b>46.2</b>	<b>74.0</b>	<b>120.2</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

## Imports

In 1998, marine shipments from overseas points unloaded at Canadian ports reached 59.3 million tonnes, a 3.5 per cent increase over the 57.3 million tonnes recorded in 1997. At 27.4 million tonnes (46 per cent of all tonnage unloaded from offshore origins), crude petroleum<sup>9</sup> dominated imports. Other major commodities unloaded included (in million tonnes) alumina and bauxite (5.4), containerized freight (8.2), iron and steel (4.3), fuel oil (2.7), iron ore (1.3) and gasoline (1.3). Well over 13 per cent of the inbound traffic was containerized.

Over 89 per cent of inbound overseas shipments was unloaded at eastern Canadian ports. The principal origins of overseas cargo were Europe, the Middle East and Africa.

Table 12-21 shows Canada's maritime traffic from overseas markets in 1998.

TABLE 12-21: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1998

(Millions of tonnes)

Foreign Region of Origin	Canadian Region of Destination		Total
	Eastern ports	Western ports	
Europe	25.5	0.2	25.7
Middle East and Africa	11.5	1.2	12.7
South and Central America	12.1	1.0	13.1
Asia and Oceania	3.8	3.9	7.8
<b>Total</b>	<b>52.9</b>	<b>6.4</b>	<b>59.3</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

9 Including transshipment of North Sea crude petroleum.



## AIR TRANSPORTATION INDUSTRY

### AIR CARGO

Domestic air cargo transportation is provided within a deregulated environment that does not restrict routing, capacity or pricing. Cargo is carried in the belly-hold of passenger aircraft, on passenger/cargo combination aircraft and in dedicated cargo aircraft. Scheduled and non-scheduled (charter) transborder and international air cargo service is provided within a framework of bilateral air agreements, international agreements and national policies. It is the prerogative of the Minister of Transport to designate the Canadian carriers that will exercise the international all-cargo rights for scheduled services, which have been acquired by Canada through bilateral negotiations.

Cargo revenues represent a small proportion of the total revenues of Canada's two major carriers. For Air Canada and Canadian Airlines, cargo revenues accounted for only 7.7 per cent of their combined 1998 total unconsolidated revenues of \$7.6 billion. Most of the cargo revenue for the major carriers is earned on cargo carried on passenger flights. Air Canada operates four passenger/cargo combination aircraft across the Atlantic. Cargo revenues are of less importance to the regional carriers that fly smaller aircraft because they have less cargo capacity. There is a large group of smaller carriers, most of which fly small cargo aircraft, that provide cargo services on a charter basis throughout the country. These carriers play a particularly important role in transporting cargo in the North.

Although specific information on Canada is not available, forecasts for the global air cargo market predict continued growth for the industry. Airframe manufacturers predict that air freight traffic will grow at an annual average rate of six percent over the next 20 years. The role of international express services is also expected to increase during the same period.

### DOMESTIC SERVICES

The domestic air cargo industry includes passenger air carriers that carry cargo in their aircraft belly-hold for incremental revenue; all-cargo carriers; and freight forwarders and consolidators of shipments.

Table 12-22 shows the volume of goods carried by Canadian air carriers, by sector, from 1993 to 1998. There was very little change in the total tonnes of cargo carried between 1997 and 1998. Domestic tonnes carried dropped by five per cent to 487,583 tonnes, and accounted for 60 per cent of the total tonnes carried in 1998. During

TABLE 12-22: GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 - 1998

Year	Domestic	Transborder	(Tonnes)	
			Other International	Total
1998 <sup>1</sup>	487,583	94,176	233,952	815,711
1997	513,719	77,387	222,452	813,558
1996	447,313	80,389	195,584	723,286
1995	416,171	87,663	183,743	687,577
1994	443,601	70,882	169,102	683,585
1993	422,147	68,238	163,108	653,493

Note: For 1995 to 1997, Level I-III carriers; for 1993 and 1994, Level I-IV carriers.  
<sup>1</sup> Preliminary data for 1998.

Source: Statistics Canada, Cat. 51-206

the same period, transborder tonnes carried increased by 22 per cent, while international tonnes carried rose by five per cent.

Table 12-23 shows the operating revenues generated by goods carried on Canadian air carrier services, by sector, from 1993 to 1998. Total cargo operating revenues increased by eight per cent between 1997 and 1998. Domestic revenues accounted for 67 per cent of total cargo operating revenues in 1998. Domestic revenues increased by eight per cent between 1997 and 1998, reaching \$768 million, while international revenues increased by seven per cent.

TABLE 12-23: OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 - 1998

Year	Domestic	International <sup>1</sup>	Total
1993	588.8	224.9	813.7
1994	562.7	296.4	859.1
1995	694.2	292.3	986.5
1996	655.3	350.5	1,005.7
1997	709.0	357.3	1,066.3
1998	768.6	383.7	1,152.3

<sup>1</sup> Includes transborder and other international.

Source: Statistics Canada, Cat. 51-206

Air cargo carriers provide a vital transportation service in the North, where alternative transportation is often not available. Large aircraft operators, such as First Air and Canadian North, provide services that link northern communities to each other and to major centres in southern Canada. In addition, numerous small cargo carriers provide service in Canada's northern regions. Preliminary data for cargo activity in the North indicate that major carriers carried four per cent more domestic cargo in 1998 than in 1997. There is no data available on activity by regional and local cargo carriers, as they are not required to file cargo carriage data.

## CANADA-U.S. TRANSBORDER SERVICES

In 1998, air transport between Canada and the US amounted to \$32.7 billion, or close to seven per cent of the total \$473.5 billion transborder trade (see Table 12-24). Of this, \$18.7 billion were imports and \$14 billion were exports. The top import commodities were telecommunications equipment (\$3.8 billion), electronic equipment (\$3.3 billion), aircraft equipment (\$3.0 billion), machinery/equipment (\$2.7 billion) and medical supplies (\$1.2 billion). The top export commodities were aircraft equipment (\$4.3 billion), office machine equipment (\$2.7 billion), telecommunications equipment (\$2.2 billion) and other equipment/tools (\$1.2 billion). It should be noted that a significant portion of cargo moving on air waybills is actually trucked between Canada and the US, but is recorded in trade data as air traffic.

**TABLE 12-24: VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 - 1998**

	(Billions of dollars)		
	<i>Air</i>	<i>All modes</i>	<i>Air (per cent)</i>
<b>Transborder</b>			
Exports <sup>1</sup>	14.0	269.9	5.2
Imports	18.7	203.6	9.2
Total US	32.7	473.5	6.9
<b>Other Countries</b>			
Exports <sup>1</sup>	9.4	48.6	19.4
Imports	20.7	95.0	21.8
Total other	30.2	143.6	21.0

<sup>1</sup> Includes domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations for exports

Many Canadian all-cargo operators provide transborder cargo services under contract to the major courier companies. Table 11-15 in the previous chapter shows the participation of Canadian air carriers in transborder courier operations.

## OTHER INTERNATIONAL SERVICES

In 1998, air transport between Canada and countries other than the US amounted to \$30.2 billion, or 21 per cent of Canada's \$143.6 billion in this trade category. Of the total carried by air, \$20.7 billion was accounted for by imports and \$9.4 billion was accounted for by exports. Ontario and Quebec dominated air transport trade with other countries, with 43 per cent and 25 per cent, respectively.

Table 12-25 shows that the main non-US destinations for Canada's exports by air were Western European countries, with \$5.2 billion in exports, and Pacific Rim countries, with \$2.4 billion. Imports by air from non-US countries also originated mainly in Western Europe, with \$10.1 billion, and the Pacific Rim, with \$7.6 billion.

Table 12-25 also shows the value of Canadian exports by air, by main destination, for 1998. Table 12-26 shows the value of Canadian imports by air, by main countries of origin, for 1998.

**TABLE 12-25: VALUE OF CANADIAN EXPORTS BY AIR AND MAIN DESTINATIONS, 1998**

<i>Destinations</i>	<i>Value (millions of dollars)</i>	<i>Air (Per cent)</i>
<b>Western Europe</b>	<b>5,175</b>	<b>54.8</b>
UK	1,571	
Germany	834	
France	740	
Switzerland	659	
Other	1,371	
<b>Pacific Rim</b>	<b>2,386</b>	<b>25.2</b>
Hong Kong	544	
Japan	483	
People's Republic of China	292	
Australia	235	
Other	831	
<b>Other Countries</b>	<b>1,888</b>	<b>20.0</b>
<b>Total Canadian Exports by Air</b>	<b>9,449</b>	<b>100.0</b>

Note: Excluding the US; including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and Special Tabulations

**TABLE 12-26: VALUE OF CANADIAN IMPORTS BY AIR, MAIN COUNTRIES OF ORIGIN, 1998**

<i>Origins</i>	<i>Value (millions of dollars)</i>	<i>Air (per cent)</i>
<b>Western Europe</b>	<b>10,131</b>	<b>48.9</b>
France	2,376	
UK	2,297	
Germany	1,492	
Italy	864	
Ireland	681	
Other	2,421	
<b>Pacific Rim</b>	<b>7,555</b>	<b>36.4</b>
Japan	2,160	
Taiwan	1,168	
Malaysia	914	
South Korea	807	
People's Republic of China	646	
Other	1,860	
<b>Other Countries</b>	<b>3,047</b>	<b>14.7</b>
<b>Total Canadian Imports by Air</b>	<b>20,733</b>	<b>100.0</b>

Note: Excluding the US.

Source: Statistics Canada, Cat. 65-203

Five major international cargo carriers provided regularly scheduled all-cargo air service to and from Canada during 1999: Cathay Pacific (Vancouver), Korean Air (Toronto), Air France (Montreal), Lufthansa Cargo (Montreal) and Iberia (Montreal). In addition to these, there were carriers operating non-scheduled, or charter, cargo flights from international points to Canada.



# PASSENGER TRANSPORTATION 13

*The Canadian Vehicle Survey undertaken in 1999 will provide much-needed data about transportation in Canada, such as information on automobile use, the purpose and length of each trip, start and finish times, driver demographics, vehicle type, and number of occupants.*

Canadians travel billions of kilometres every year by air, rail, ship, and road vehicles, including passenger vehicles and scheduled urban, scheduled intercity and charter buses. This chapter focuses on the level of passenger activities of each modal transport service. For public passenger services, this overview provides a sense of the relative use made of the different modes of travel and reflects recent trends.

Although the most common means of travel in Canada is the automobile, little hard data has been available until now to track the automobile travel patterns of Canadians. The information presented in this chapter is based mainly on provincial and territorial registration data and does not focus on travel patterns or attempt to analyse vehicle usage. The Canadian Vehicle Survey undertaken in the past year is designed to fill in many gaps in data in this important area.

## RAIL TRANSPORTATION

Passenger traffic declined in 1998, to about 4.0 million passengers from 4.1 million in the previous year. Passenger-kilometres followed the same trend, dropping to 1.46 billion from 1.51 billion in 1997.

As Table 13-1 shows, VIA Rail carried the large majority of passenger traffic in 1998, with 3.65 million passengers and about 1.38 billion passenger-kilometres. The Quebec–Windsor corridor continued to account for about 85 per cent of passengers for the Class I carrier. VIA's eastern services carried slightly more of the remaining traffic than did its western services.

Algoma Central Railway, BC Rail, Ontario Northland, and the Quebec, North Shore and Labrador Railway are

TABLE 13-1: PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 – 1998

Year	VIA Rail	Class II	Total
<b>Passengers</b>			
1998	3,646,000	334,280	3,980,280
1997	3,764,983	339,196	4,104,179
1996	3,666,000	323,405	3,989,405
1995	3,597,000	414,315	4,011,315
1994	3,586,000	441,622	4,027,622
<b>Passenger-kilometres</b>			
1998	1,377,598,464	80,233,805	1,457,832,269
1997	1,423,479,252	91,113,448	1,514,592,700
1996	1,436,197,898	77,137,263	1,513,335,161
1995	1,382,568,118	84,417,430	1,466,985,548
1994	1,342,421,423	84,959,534	1,427,380,957

Source: Statistics Canada, Cat. 52-216; Transport Canada

the four Class II carriers reporting intercity passenger statistics. In aggregate, according to reported statistics, these railways carried 334,280 passengers and registered about 80.2 million passenger-kilometres.

## BUS TRANSPORTATION

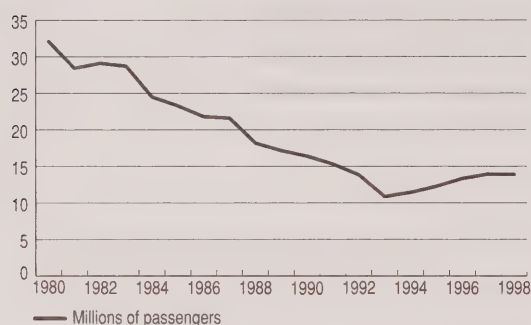
### SCHEDULED INTERCITY BUS SERVICES

In 1998, approximately 13.9 million passengers travelled approximately 134 million kilometres on motor coaches, school buses and other vehicles used in scheduled intercity bus service operations, according to Statistics Canada. Scheduled intercity operators carried 44 per cent of those passengers i.e. 6.1 million passengers travelling 46 million kilometres. They achieved this level of activity with 100 main terminals and an additional 1,600 agencies (local businesses that sell bus tickets).



Figure 13-1 depicts the total number of passengers using scheduled intercity services provided by all industry segments (intercity carriers, charter carriers, and school bus operators) from 1980 to 1998. Ridership was in fairly steady decline from the late 1970s until it hit a low of 10.8 million in 1993. In recent years, the number of riders has stabilized at between 13.5 and 14 million annually.

FIGURE 13-1: INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 1998



Source: Statistics Canada, Cat. 53-215

Besides offering intercity passenger service, scheduled intercity operators realize a significant portion of their revenues from charter bus services, school bus and other passenger bus service, and bus parcel express service. These services account for an additional 1.6 million passengers and over 17 million bus-kilometres.

In 1998, according to Statistics Canada, there were 31 operators with revenues exceeding \$200,000 that reported total annual operating revenues of \$133.1 million and operating expenses of \$123.7 million. Approximately 62 per cent of the operating revenues of these operators came from scheduled intercity services, with charter and tour

TABLE 13-2: SCHEDULED INTERCITY BUS SERVICE CORRIDORS

Corridor	Carrier
Halifax–Moncton–Quebec	SMT/Acadian
Quebec City–Montreal	Orleans Express
Montreal–Toronto	Trentway-Wagar
Montreal–Ottawa	Voyageur Colonial <sup>1</sup>
Ottawa–Toronto	Greyhound <sup>1</sup>
Toronto–Hamilton–Niagara/Buffalo	Trentway; Greyhound <sup>1</sup>
Toronto–London–Windsor	Greyhound <sup>1</sup>
Toronto–Barrie	Greyhound <sup>1</sup> ; Ontario Northland; Penetang Midland; GO
	Ontario Northland
Toronto–North Bay	Greyhound <sup>1</sup> , Ontario Northland
Toronto–Sudbury	Greyhound <sup>1</sup>
Toronto–Winnipeg–Calgary–Vancouver	Greyhound <sup>1</sup> ; Red Arrow (Pacific Western)
Calgary–Edmonton	

<sup>1</sup> Subsidiary of Laidlaw.

Source: Motor Coach Canada, August 1998

services contributing around 11 per cent, other passenger services nine per cent, and parcel express eight per cent.

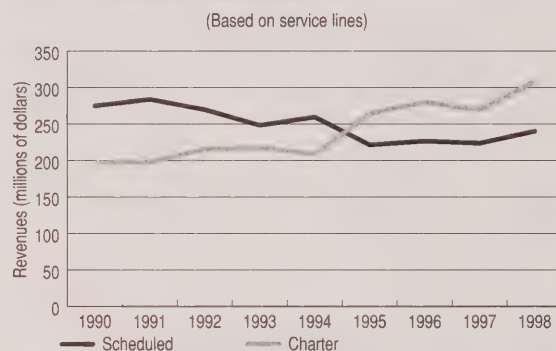
Table 13-2 identifies the main corridors in which scheduled intercity bus service is offered in Canada and names the operators providing the service. Laidlaw is the dominant carrier in the majority of intercity corridors in Ontario and western Canada.

## CHARTER BUS SERVICES

Charter bus activities are closely but not solely tied to tourism, an activity that has been growing in importance in all regions of the country.

Figure 13-2, based on Statistics Canada data, shows how revenues generated from scheduled intercity service and from charter service have changed since 1990. The data shows that between 1990 and 1994 charter revenues increased gradually and then afterward increased significantly. Scheduled intercity revenues gradually declined between 1990 and 1995, and then changed little between 1995 and 1998.

FIGURE 13-2: SCHEDULED INTERCITY AND CHARTER SERVICES REVENUE TRENDS, 1990 – 1998



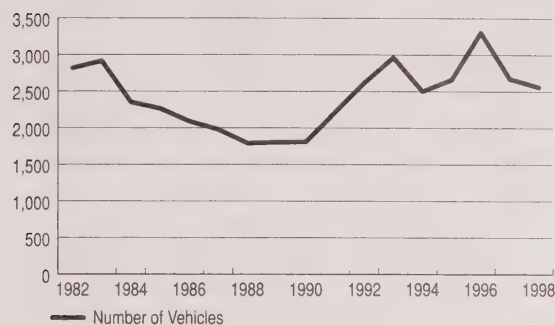
Source: Statistics Canada, Cat. 53-215

Statistics Canada data also shows that the increase in charter bus operation revenues was accompanied by growth in the size of the charter bus fleet. Figure 13-3 shows that the number of vehicles used in charter service peaked at 3,305 buses in 1996 before declining to 2,562 in 1998. Data is not broken down by bus type.

Figure 13-4 shows that while the number of vehicles used in charter bus operations fluctuated during the 1990s, the average use made of each vehicle steadily increased, from a low of 40,000 kilometres in 1993 to over 62,000 kilometres in 1998.

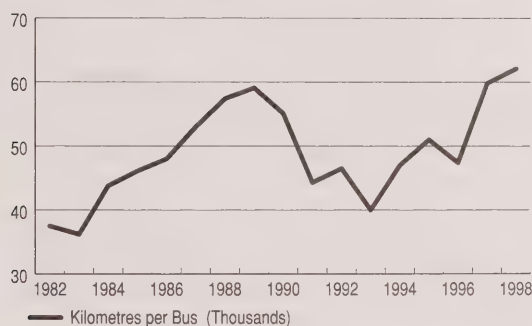
The expansion in charter service is also indicated by an increase in annual bus-kilometres. Since 1991, bus-kilometres have increased by 62 per cent.

FIGURE 13-3: CHARTER BUS FLEET SIZE, 1982 – 1998



Source: Statistics Canada, Cat. 53-215

FIGURE 13-4: CHARTER BUS FLEET UTILIZATION, 1982 – 1998

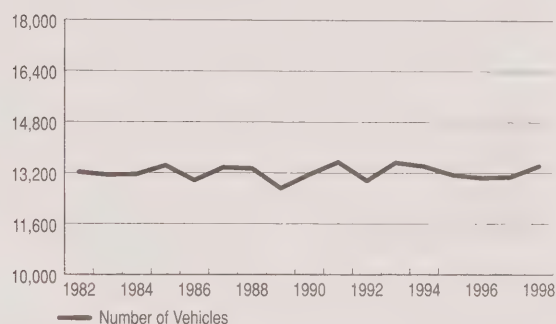


Source: Statistics Canada, Cat. 53-215

## URBAN TRANSIT BUS SERVICES

The number of vehicles used for urban transit in Canada has remained fairly stable during the 1990s at between 13,000 and 13,500 a year, as has the utilization rate, in the range of 55,000 to 58,000 kilometres per vehicle per year. Figure 13-5 shows the number of buses in Canada's urban fleet from 1982 to 1998.

FIGURE 13-5: URBAN TRANSIT FLEET SIZE, 1982 – 1998



Source: Statistics Canada, Cat. 53-215

The composition of the fleet has changed over the past five years, with significantly fewer motor coaches in operation. To make services more accessible, low-floor buses are being added to fleets in cities such as Vancouver, Calgary, Thunder Bay, Kitchener and Montreal. The number of these buses in operation has increased significantly over the past two years.

Table 13-3 profiles Canada's urban transit fleet by category from 1991 to 1998.

The number of passengers using urban transit has remained fairly constant since 1994, after declining in the early 1990s. In 1998, 1.41 billion passengers used urban transit, equalling the level attained in 1992. The ridership level in 1998 was 2.3 per cent higher than in 1997.

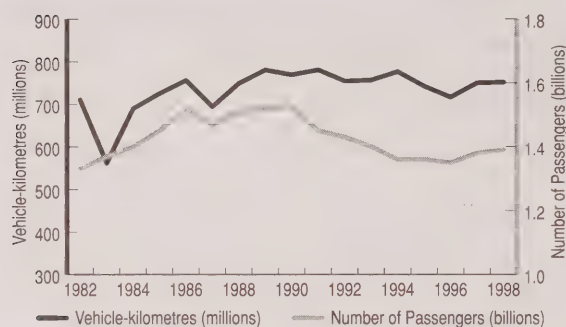
TABLE 13-3: URBAN TRANSIT FLEET COMPOSITION, 1991 – 1998

	1991	1992	1993	1994	1995	1996	1997	1998
Number of carriers reporting	65	74	74	84	80	77	65	62
Standard motor bus	10,474	9,757	10,196	10,085	9,855	9,622	9,030	8,554
Low-floor bus		135	145	188	305	499	1,019	1,827
Trolley coach	332	358	308	344	304	319	322	315
Articulated bus	458	364	373	359	306	287	287	297
Light rail vehicle	527	500	547	547	548	520	520	520
Heavy rail vehicle	1,379	1,735	1,679	1,381	1,381	1,373	1,381	1,395
Commuter rail vehicle				331	359	359	336	346
Other	372	107	279	176	82	70	182	169
<b>Total vehicles</b>	<b>13,542</b>	<b>12,956</b>	<b>13,527</b>	<b>13,411</b>	<b>13,140</b>	<b>13,049</b>	<b>13,077</b>	<b>13,423</b>

Source: Statistics Canada, Cat. 53-215

With the size of the urban transit fleet remaining fairly stable during the 1990s, Statistics Canada reports that the total distance travelled was also relatively stable during this period, at around 750 million kilometres. Figure 13-6 shows these trends in urban transit from 1982 to 1998.

FIGURE 13-6: LONG-TERM TRENDS IN URBAN TRANSIT, 1982 – 1998



Source: Statistics Canada, Cat. 53-215

## AUTOMOBILE TRANSPORTATION

The Canadian Vehicle Survey referred to in last year's report has been undertaken to provide much-needed data about transportation in Canada. With results from the survey, it will be possible to derive annual estimates of vehicle-kilometres for all vehicles on the road, including automobiles. Annual estimates for 1999 will be available in the summer of 2000. Among other findings, the survey results will provide information on automobile use, such as the purpose and length of each trip, start and finish times, driver demographics, and number of occupants, not to mention vehicle type.

The survey frame for the Canadian Vehicle Survey is drawn from provincial and territorial registration file information on vehicles. This information is, in itself, a source of valuable information. As Table 13-4 shows, a total of 16,538,054 light vehicles (vehicles weighing less than 4,500 kilograms) were registered in Canada in 1999. More than 85 per cent of these vehicles were registered in one of four provinces: Ontario (37.3 per cent), Quebec (23.2 per cent), British Columbia (13.2 per cent) and Alberta (11.4 per cent). The four Atlantic provinces accounted for 7.5 per cent of the light vehicles, while Manitoba and Saskatchewan together made up 7.1 per cent. The three territories accounted for 0.2 per cent.

TABLE 13-4: REGISTERED LIGHT VEHICLES BY PROVINCE/TERRITORY, 1999

Province/Territory	Light vehicles	Per cent of all Registered vehicles
Newfoundland	240,212	96.7
Prince Edward Island	70,600	93.8
Nova Scotia	499,193	96.5
New Brunswick	421,769	96.2
Quebec	3,843,729	97.3
Ontario	6,174,461	96.9
Manitoba	566,581	95.9
Saskatchewan	615,965	89.3
Alberta	1,878,151	91.1
British Columbia	2,185,877	96.4
Yukon	22,488	90.1
Northwest Territories	16,896	93.1
Nunavut	2,105	84.9
Canada	16,538,054	95.8

Source: Special tabulations by Statistics Canada for the Canadian Vehicle Survey, from registration files provided by all provinces and territories

Dividing the population of each province and territory by the number of light vehicles registered provides a crude indicator of the importance of the automobile to Canadians in satisfying their passenger transportation needs. For the country as a whole, there was one light vehicle registered for every 1.85 Canadians in 1999.

At the provincial level, the ranking of persons per vehicle was as follows: Alberta (1.58), Saskatchewan (1.67), New Brunswick (1.79), British Columbia (1.84), Ontario (1.87), Nova Scotia (1.89), Quebec (1.92), Prince Edward Island (1.95), Manitoba (2.02) and Newfoundland (2.25). Far more than a reflection of regional economic disparities, the regional rankings might be explained in terms of a number of factors. These include access to urban transit systems, population density, age distribution of local populations, degree of urbanization, relative size of urban areas, degree of urban sprawl, mix of local economic activities, level of taxation (including taxes on fuel), and degree of congestion.

In the territories, Nunavut had a ratio of 12.83 residents per registered light vehicle, compared with a ratio of 1.38 in the Yukon and 2.49 for Northwest Territories.



## MARINE TRANSPORTATION

### CRUISE SHIP TRAFFIC

Cruise business in the Port of Vancouver recorded its 17<sup>th</sup> consecutive year of growth in 1999, with a passenger count of nearly 948,000.

It was also the best year ever for the Port of Halifax, with the number of passengers visiting the port reaching nearly 108,000, more than double the number for 1998. Most port visitors arrive or depart on cruises between New York and Halifax or on five-day trips from New York to Halifax and Saint John.

Traffic was up overall for the Atlantic ports. The Cruiseship Authority of Newfoundland and Labrador reported a record year for cruise ship visits, with vessels calling at 17 different ports and making a total of 60 calls, bringing over 25,000 passengers. With the rules for vessels transiting under the Confederation Bridge clarified, more international cruise vessels called in Prince Edward Island: 16 ships and 7,030 passengers visited Charlottetown in 1999, up from only 2,115 passengers in 1998.

The boom in Atlantic cruise business can be explained in part by the collective marketing efforts of both the Atlantic Canada Cruise Association (formed in 1998) and the New Atlantic Frontier, a group of about 30 ports in a loop from New York to Montreal that have pooled their marketing resources.

Montreal and Quebec City recorded fewer cruise visitors in 1999. The grounding of the *Norwegian Sky* in the St. Lawrence and its subsequent removal from service for repairs reduced the number of calls it was able to make in Quebec City this year.

Table 13-5 shows the cruise ship traffic at major Canadian ports from 1990 to 1999.

TABLE 13-5: CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 - 1999

Year	(Passengers)				
	Vancouver	Montreal	Quebec City	Halifax	Saint John
1990	388,323	30,869	34,783	24,423	1,748
1991	423,928	47,047	51,363	43,512	3,402
1992	449,239	34,872	41,141	30,112	5,500
1993	519,942	30,626	38,642	30,917	12,379
1994	591,409	33,920	36,401	37,717	23,629
1995	596,744	27,384	38,981	30,257	12,226
1996	701,547	19,078	21,464	36,584	8,543
1997	816,537	29,324	36,569	44,328	19,813
1998	873,102	32,583	43,838	47,987	28,418
1999 <sup>1</sup>	947,659	18,306	36,389	107,837	40,000

1 Preliminary.

Source: Canada Port Authorities

No federal department keeps formal records of the number of passenger trips in domestic cruise operations. Yet the Canadian Passenger Vessel Association, which represents many of the larger operators, in its annual survey for 1998, accounted for 5.77 million passengers during the year on 115 vessels ranging from 12 gross registered tonnes (GRT) to over 400 GRT.

### FERRY TRAFFIC

Traffic figures for 1999 for all members of the Canadian Ferry Operators Association (CFOA) are not yet available. The relative size of their operations is, however, evident in the traffic figures for 1998.

British Columbia Ferry Corporation, by far the largest operator in Canada, carried approximately 21.4 million passengers and 7.8 million vehicles during the 1998/99 fiscal year. Ferry services operated by British Columbia's Ministry of Transportation and Highways carried a further 5.2 million passengers and 2.9 million vehicles.

La Société des traversiers du Québec carried 5.5 million passengers and 1.9 million vehicles, while Marine Atlantic reported carrying 444,425 passengers, 138,850 passenger vehicles and 71,311 trucks in 1998. (The 1998 figures represent the first year of Marine Atlantic's reduced mandate and are only for the services linking Newfoundland to the mainland of Canada.) Preliminary figures for 1998 indicate that the remaining CFOA members accounted for approximately 4.8 million passengers and 2.1 million vehicle crossings.

## AIR TRANSPORTATION

### GOVERNMENT POLICY INITIATIVES

In May, Canada was an active participant, as a Member of the Council and host nation, in the meeting of the International Civil Aviation Organization (ICAO) in Montreal. The *Montreal Convention* developed at this meeting is a new legal regime dealing with the liability of air carriers in the event of the death or injury of a passenger, loss of baggage or cargo, or delay of international flights. Once ratified by at least 30 of the ICAO's 185 member states, the *Montreal Convention* will allow victims to claim damages, regardless of whether the carrier is at fault. It will also permit damage claims resulting from a passenger death or injury to be filed in the country where the victim lived and will require airlines to provide immediate financial assistance to victims' relatives, with amounts to be deducted later from the final settlement.



The major feature of the *Montreal Convention* is the concept of unlimited liability, in contrast to the 1929 *Warsaw Convention* it replaces. Whereas the old regime set a limit of approximately US\$8,300 in case of death or injury to passengers, the *Montreal Convention* introduces a two-tier system. The first tier provides for the strict liability of a carrier of up to 100,000 Special Drawing Rights (approximately US\$194,325<sup>1</sup>) regardless of fault by a carrier. The second tier is based on a presumption of fault of a carrier and has no limit of liability. The Government of Canada is committed to begin ratifying the *Montreal Convention* in 2000.

On the domestic front, the period from August to December 1999 saw a number of private sector and government initiatives related to the restructuring of the Canadian airline industry. See Chapter 11, *Structure of Transportation Industry*, for more details.

## BILATERAL INITIATIVES

During 1999, there was a progressive revision of Canada's bilateral agreements related to the opportunities created by the federal Transport Minister's June 1998 statement on international air policy. This statement permitted Air Canada and Canadian Airlines each to select five countries to serve on a code-share basis; in each country, the other would be the designated Canadian air carrier for own-aircraft flights. Further to that statement, and following efforts made during 1998, Canada successfully renegotiated its bilateral agreements with Thailand and Finland in 1999.<sup>2</sup>

Air Canada became entitled to provide code-share services to Thailand but is restricted to routings across the Atlantic. (Canadian Airlines suspended service to Thailand on January 25, 2000.) Thai International Airways continues to enjoy access to Toronto and Montreal from all cities in Thailand but presently does not exercise these rights.

Canadian Airlines gained the right to provide code-share service with Finnair, while Air Canada could use its code-share services with SAS and Lufthansa. Full liberal code-sharing provisions will take effect in the summer of 2000, allowing each country to designate multiple airlines to provide direct, intermediate and beyond services.

The Minister also announced that the Taiwan market would become eligible for a second designation. As a result, both Air Canada and EVA Air introduced service

between Vancouver and Taipei in the summer of 1999, EVA Air on June 3 and Air Canada on July 5. Both airlines carry each other's code on their flights. Foreign policy considerations preclude there being a bilateral air agreement between Canada and Taiwan, but air services are enabled pursuant to a ministerial directive with the concurrence of the Minister of Foreign Affairs.

New agreements were reached with Romania and the United Arab Emirates. The revised agreement with Romania permits Air Canada to offer service to Bucharest via Frankfurt, code-sharing with Lufthansa. Romania's airline, TAROM, gained the right to serve Montreal from Romania and to fly beyond to New York and Chicago. TAROM introduced twice-weekly, own-aircraft service to Montreal in June.

Canada also concluded an inaugural agreement with the United Arab Emirates, permitting each country to designate an airline to provide service between any city in either country, either with its own aircraft or by code-sharing. Air Canada became entitled to offer code-share services via London with Emirates Air and via Frankfurt to Dubai with either Lufthansa or Emirates Air.

All bilateral negotiations were suspended from August until the end of 1999 while industry restructuring took place. Table 13-6 lists the bilateral air agreements in force at the end of 1999.

TABLE 13-6: COUNTRIES / TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 1999

Antigua	El Salvador	Japan	Russia
Argentina	Fiji	Jordan	St. Kitts and Nevis
Australia	Finland	Lebanon	St. Lucia
Austria	France	Malaysia	Saudi Arabia
Bahamas	Germany	Mexico	Singapore <sup>1</sup>
Barbados	Greece	Morocco	South Korea
Belgium	Guatemala	Netherlands	Spain
Brazil	Haiti	Netherlands Antilles	Sweden
Bulgaria	Hong Kong	New Zealand	Switzerland
Cayman Islands	Hungary	Nicaragua	Thailand
Chile	Iceland <sup>1</sup>	Norway	Trinidad and Tobago
China	India	Pakistan	Turkey
Costa Rica	Indonesia	Panama	Ukraine
Cuba	Ireland	Peru	United Arab Emirates
Czech Republic	Israel <sup>2</sup>	Philippines	United Kingdom
Denmark	Italy	Poland	Venezuela
Dominican Republic	Ivory Coast	Portugal	
Egypt	Jamaica	Romania	

1 Services to Iceland and Singapore are being operated under memoranda of understanding that are in force.

2 Services to Israel are being operated under temporary arrangements.

Source: Transport Canada, Air Policy

1 On February 28, 2000, one Special Drawing Right = C\$0.5146.

2 As a follow-up to the statement, Canada renegotiated its bilateral agreements with New Zealand, Mexico and the Netherlands in 1998 to facilitate the authorization of new services pursuant to the Minister's statement. Canadian Airlines was given the right to provide code-share services to Finland.

## DOMESTIC SERVICES AND TRAFFIC

Domestic passenger traffic continued to grow in 1998, albeit at a lower rate than 1996 and 1997. Preliminary airport statistics indicate moderate passenger growth of 2.4 per cent for 1999. The change in the level of passenger traffic is attributed in part to changes in service levels and patterns provided by the industry.

Table 13-7 summarizes the growth of domestic air travel over the past ten years. It shows five consecutive years of growth since 1994. The regional distribution of passenger traffic is portrayed in Figure 13-7.

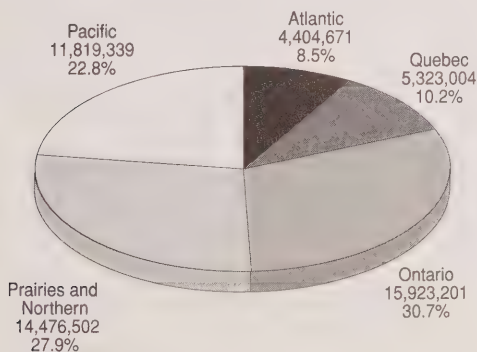
**TABLE 13-7: DOMESTIC PASSENGER TRAFFIC, 1988 – 1998**

Year	Thousands	Per cent change
1988	23,338	—
1989	22,784	(2.4)
1990	22,784	0.0
1991	20,463	(10.2)
1992	20,500	0.2
1993	19,676	(4.0)
1994	19,902	1.1
1995	20,889	5.0
1996	23,371	11.9
1997	25,224	7.9
1998	25,973	3.0

Note: Passenger traffic is an approximation that is based on enplaned and deplaned passengers divided by two to avoid the double counting of most passengers.

Source: Statistics Canada

**FIGURE 13-7: DOMESTIC PASSENGER TRAFFIC BY REGION, 1998**



Note: Enplaned and deplaned passengers (passengers double-counted).

Source: Aviation Statistics Centre, Statistics Canada, Statements 2.4 and 6

Airlines served several cities with new or additional scheduled air services during 1999, as shown in Table 13-8.

**TABLE 13-8: NEW OR ADDITIONAL SCHEDULED AIR SERVICES, 1999**

City-pairs	Service	Airline
Kitchener/Waterloo-Ottawa	2x daily non-stop	Trillium Air
Ottawa-Iqaluit	6x weekly	Air NorTerra
Calgary-Ottawa	2x daily non-stop	Air Canada
Toronto-Victoria	1x daily non-stop, seasonal	Air Canada
Calgary-Halifax	1x daily non-stop	Canadian Airlines
Prince George-Calgary	1x daily non-stop	WestJet
Prince George-Vancouver	1x daily non-stop	WestJet
Prince George-Victoria	1x daily non-stop	WestJet
Calgary-Thunder Bay	1x daily non-stop	WestJet
Edmonton-Grande Prairie	1x daily non-stop	WestJet

Source: Transport Canada, Air Policy

In some cases, these services were a competitive response to existing services. Air NorTerra's Ottawa-Iqaluit service, for example, competed with First Air's service. WestJet's Grande Prairie-Edmonton service competed directly with those of AirBC and Canadian Regional. The route between Calgary and Halifax was also contested between the new service provided by Canadian Airlines and the additional service provided by Air Canada.

Operators providing regional and local air services in Quebec and Atlantic Canada moved to provide air services to most communities served by InterCanadien immediately after it suspended its operations in November. Because November is traditionally in the low traffic season, much of the traffic in Quebec and Atlantic Canada that might not have been accommodated otherwise was absorbed by Air Nova. There was also a gradual restoration of service during December by InterCanadien's commercial partners, Canadian Regional and Ontario Regional. Ontario Regional had already assumed many of the regional routes served by InterCanadien during October. As a result of InterCanadien's suspended operations, however, Charlo and Chatham/Miramichi, New Brunswick, and Stephenville, Newfoundland, were without air service.

Table 13-9 summarizes the level of competition in the top 25 markets, in terms of seats offered. It shows that Air Canada and Canadian Airlines combine for more than 50 per cent of each of the markets. WestJet's penetration of the western Canadian market is notable, considering that the airline has been operating only four years. Also of note are the inroads made by Canada's jet operators of long-haul charter air services — Air Transat, Canada 3000 and Royal Airlines — which had virtually no domestic presence prior to 1988.

TABLE 13-9: COMPETITION IN DOMESTIC AIR MARKETS  
AS OF JULY 1, 1999

Rank	Market <sup>1</sup>	Daily Seats <sup>2</sup>	--- Capacity Market Shares (per cent) ---				
			Air Canada <sup>3</sup>	Canadian Airlines <sup>3</sup>	WestJet	Charter	Others
1	Montreal-Toronto	4,973	64.4	22.0		13.6	
2	Toronto-Vancouver	4,481	43.3	41.7		15.1	
3	Calgary-Vancouver	4,036	32.3	45.3	15.9	6.5	
4	Calgary-Toronto	3,160	48.2	39.8		12.0	
5	Ottawa-Toronto	2,999	66.7	33.3			
6	Calgary-Edmonton	2,337	31.1	49.8	19.1		
7	Halifax-Toronto	2,184	55.5	32.9		11.6	
8	Toronto-Winnipeg	1,853	66.8	22.4		10.8	
9	Edmonton-Toronto	1,594	51.8	35.0		13.2	
10	Vancouver-Victoria	1,575	41.3	58.7			
11	Edmonton-Vancouver	1,538	26.5	44.8	20.1	8.7	
12	Calgary-Winnipeg	1,050	38.5	30.5	31.0		
13	Kelowna-Vancouver	891	23.2	39.3	37.5		
14	Halifax-St. John's	830	65.1	29.1		5.8	
15	Prince George-Vancouver	810	23.0	49.5	27.5		
16	Montreal-Quebec City	797	42.8	52.0			5.1
17	Montreal-Ottawa	711	46.4	44.9			8.7
18	Halifax-Montreal	687	64.9	35.1			
19	Vancouver-Winnipeg	687	34.1	43.7		22.2	
20	London-Toronto	649	69.9	30.1			
21	Calgary-Regina	649	34.5	35.1	30.4		
22	Ottawa-Vancouver	644	37.9	56.5		5.6	
23	Thunder Bay-Toronto	643	61.9	35.4		2.7	
24	Calgary-Saskatoon	628	37.3	36.8	25.9		
25	Calgary-Kelowna	621	20.4	35.4	44.2		

1 The top 25 markets are ranked on the number of daily seats.

2 The number of daily seats is defined as the average number of seats offered on non-stop flights in each direction.

3 Data for Air Canada and Canadian Airlines include the number of seats operated by regional code-share partners.

Source: Official Airline Guide and airline timetable

Table 13-10 summarizes the number of non-stop links to airports in the National Airport System (NAS). It indicates that the number of air links depends not only on the amount of traffic generated at a site but also (as with Winnipeg and Yellowknife) on each airport's role as a gateway to remote communities.

## CANADA-US TRANSBORDER SERVICES AND TRAFFIC

Growth in transborder traffic continued for the fifth consecutive year since the signing in February 1995 of the Canada-U.S. Air Transport Agreement (i.e. the "Open Skies" Agreement). Between 1994, the last full year before the new air agreement took effect, and 1998, this market grew from 13.6 million passengers to 18.7 million passengers. Preliminary airport statistics indicate that moderate growth continued in 1999, with an estimated 4.2 per cent increase. Figure 13-8 plots the growth in this market.

TABLE 13-10: NUMBER OF DOMESTIC MARKETS SERVED INCLUDING  
CHARTERS AS OF JULY 1, 1999

Airport <sup>1</sup>	Number of Markets with Non-stop Flights			Number of Airlines <sup>2</sup>
	NAS Airports	Non-NAS Airports	Total	
Calgary	13	11	24	7
Charlottetown	2	1	3	3
Edmonton	11	5	16	7
Fredericton	6	1	7	2
Gander	3	2	5	3
Halifax	12	5	17	5
Iqaluit	1	10	11	4
Kelowna	4	1	5	3
London	2	2	4	2
Moncton	6	2	8	4
Montreal/Dorval <sup>3</sup>	10	16	26	8
Ottawa	11	5	16	5
Prince George	3	4	7	3
Quebec City	4	9	13	3
Regina	6	1	7	5
Saint John	5	0	5	3
St. John's	3	4	7	6
Saskatoon	6	1	7	6
Thunder Bay	3	8	11	6
Toronto	19	10	29	6
Vancouver	13	21	34	11
Victoria	7	1	8	6
Whitehorse	1	2	3	4
Winnipeg	10	20	30	10
Yellowknife	1	16	17	8

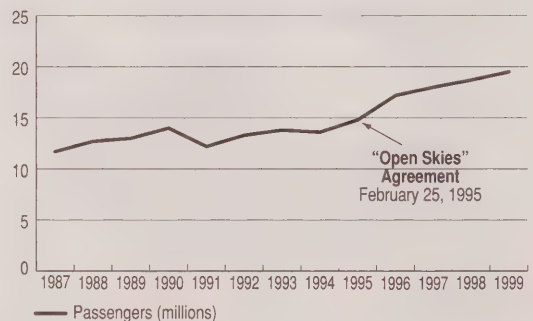
1 All airports shown are part of the National Airport System (NAS).

2 Regional airlines are counted as an airline only if they do not code-share with a major airline.

3 There are no domestic services to Montreal/Mirabel.

Source: Official Airline Guide and airline timetable

FIGURE 13-8: CANADA - US TRAFFIC, 1987 - 1999



Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6 and Transport Canada



In the transborder market, Canadian airlines have dramatically improved their percentage of passengers, to the extent that in 1998 they carried slightly more passengers than US airlines. This increase, however, did not occur at the expense of the US industry, whose airlines have carried 20 per cent more traffic since 1994. Table 13-11 encapsulates the growth of the transborder market since the new agreement in 1995. Appendices 13-1 and 13-2, show entry, exit and ongoing activity in the Canada-U.S. market in terms of airline, air carrier domicile and points served.

**TABLE 13-11: CANADA-US AIR PASSENGERS: SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 1998**

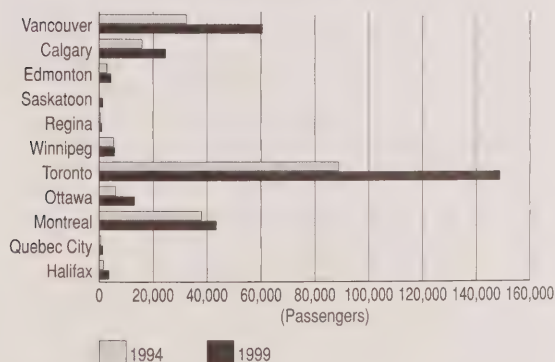
Period	Canadian Carriers		US Carriers		All Carriers	
	Passengers	Market share	Passengers	Market share	Passengers	Annual change
	(thousands)	(Per cent)	(thousands)	(Per cent)	(thousands)	(Per cent)
1991	5,182	42.3	7,057	57.7	12,239	--
1992	5,619	42.2	7,688	57.8	13,307	3.6
1993	5,634	40.9	8,146	59.1	13,780	3.6
1994	5,908	43.3	7,735	56.7	13,643	(1.0)
1995	6,482	43.7	8,367	56.3	14,849	8.8
1996	7,850	45.7	9,317	54.3	17,167	15.6
1997	8,883	49.5	9,068	50.5	17,951	4.6
1998	9,484	50.6	9,257	49.4	18,741	4.4

Notes: Excludes passengers carried by non-Canadian and non-US carriers.

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6, and Transport Canada

Figure 13-9 compares the number of seats currently offered in the transborder market with those offered in 1994. There is a marked improvement in the number of seats offered in most communities.

**FIGURE 13-9: AVERAGE CANADA - US SCHEDULED CAPACITY (EXCLUDING CHARTERS), 1994 AND 1999**



Source: Transport Canada, Air Policy

Table 13-12 shows the number of US airports served from each NAS airport. These numbers are proportional to the number of transborder passengers served at these sites. Note that the table does not include services offered by the Canadian leisure airlines (Air Transat, Canada 3000, Royal Airlines and Sky Service), although these airlines do play a major role in US resort destinations, particularly during the winter months.

**TABLE 13-12: NUMBER OF US AIRPORTS SERVED (SCHEDULED NON-STOP ONLY) AS OF JULY 1, 1999**

	Number of US Airports	Number of Airlines	
		Canada	US
Calgary	10	2	6
Edmonton	4	2	2
Halifax	2	1	2
Kelowna	1	-	1
London	2	-	2
Montreal / Dorval	22	1	5
Ottawa	9	2	5
Quebec City	2	1	2
Regina	1	-	1
Saskatoon	1	-	1
Thunder Bay	1	-	1
Toronto	45	2	8
Vancouver	20	2	8
Victoria	1	-	1
Whitehorse	2	1	1
Winnipeg	3	1	1

Notes: Includes only airports with scheduled transborder service.

Regional airlines are counted as an airline only if they do not code-share with a major airline. Includes seasonal services.

Source: Official Airline Guide and airline timetables

Very high levels of competition and poor financial results prompted a realignment of transborder services along the West Coast in the spring of 1999. Canadian Airlines suspended its service to San Jose in January and ceased services to Seattle, Portland, Las Vegas and San Diego in April. Withdrawal of these services was accompanied by the announcement of a code-share agreement between Canadian Airlines and Alaska Airlines, which serves seven US cities from Vancouver along with its affiliate, Horizon Air. The decision by Canadian Airlines to code-share with Alaska Airlines closely followed American Airlines' announcement of a code-share with Alaska Airlines in US domestic markets. In a related move, American Airlines acquired start-up Reno Air during 1999. As part of the realignment of services, Reno Air withdrew from the Vancouver market when it terminated its Vancouver-Reno service in April.

Despite the withdrawal of services along the West Coast, Canadian Airlines was active in other markets in 1999. Edmonton-Chicago and Calgary-Houston routes were added to the summer schedule. An Ottawa-Raleigh service was added by Canadian Regional in January 1999.



Canadian Airlines continued service in the high-density markets between Vancouver and Los Angeles/San Francisco.

American Airlines fully restored its code-share relationship with Canadian Airlines in 1999. American Airlines had been forced to reduce code shares during 1998 to comply with the contract with its pilots.

Air Canada continued its expansion in transborder markets, adding eight new routes in 1999, four of them with its own equipment. The most significant of the new routes were Toronto–San Diego, and a new Winnipeg–Denver service by its subsidiary, Air BC. Air Canada also launched twice daily non-stop service between Chicago and Calgary in May. In July, Air BC launched a second daily non-stop flight from Edmonton to Denver shortly after Delta Airlines' exit from the Edmonton–Salt Lake City market. One month later, Air Canada launched its 50th new route since Open Skies with service between Ottawa and Washington's National Airport. In the fall, Air Canada launched daily non-stop service between Halifax and Washington Dulles.

US carrier Continental Airlines added three new services, including a new Quebec–Newark service by Continental Express. With its spring 1999 schedule, Delta Airlines terminated service on three transborder routes: Edmonton–Salt Lake City, Ottawa–New York/LaGuardia and Toronto–Boston. In December, US Airways reinstated its Toronto–Washington/Reagan services after a four-year hiatus.

Table 13-13 lists the new transborder routes introduced during 1999.

**TABLE 13-13: NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 1999**

Route		Airline
Calgary	Chicago	Air Canada
Calgary	Houston	Canadian Airlines
Edmonton	Chicago	Canadian Airlines
Halifax	Washington/Dulles	Air Canada
Montreal/Dorval	Cleveland	Continental Express
Montreal/Dorval	Portland, Maine	Air Canada/Air Nova
Ottawa	Raleigh	Canadian Regional
Ottawa	Washington/Reagan	Air Canada
Quebec City	New York/Newark	Continental Express
Toronto/Pearson	Rochester	Air Canada/Air Ontario
Toronto/Pearson	San Diego	Air Canada
Toronto/Pearson	Syracuse	Air Canada/Air Ontario
Toronto/Pearson	Washington/Reagan	US Airways/Mesa
Vancouver	New York/Newark	Continental (seasonal)
Vancouver	St. Louis	Trans World (seasonal)
Winnipeg	Denver	Air Canada/AirBC

Source: Transport Canada, Air Policy

## OTHER INTERNATIONAL SERVICES AND TRAFFIC

The number of international passengers grew by 5.9 per cent in 1998, with most of the growth in the Atlantic and Southern markets. Table 13-14 shows the growth of international passenger traffic between Canada and countries other than the US from 1991 to 1998. The pattern of very high growth of passenger traffic across the Pacific was interrupted in 1998. However, even the small growth figures can be considered a positive result in light of the weakness of the Asian economy.

**TABLE 13-14: NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORT SYSTEM (NAS) (SCHEDULED DIRECT ONLY) AS OF JULY 1, 1999**

Airport	Number of International destinations	Number of Airlines	
		Canada	International
Calgary	3	2	-
Edmonton	1	1	-
Halifax	5	1	2
Iqaluit	2	1	1
Montreal/Dorval	24	2	14
Montreal/Mirabel	4	1	2
Ottawa	1	2	-
Quebec City	1	1	-
St. John's	2	1	1
Toronto	41	3	16
Vancouver	15	2	10
Whitehorse	1	-	1
Winnipeg	1	1	-

Notes: Includes only airports with scheduled international service. Includes seasonal services.

Source: Official Airline Guide and airline timetables

Moderate growth is expected to continue into 1999; preliminary airport statistics show a further 5.9 per cent growth in international passenger traffic.

Air Canada launched numerous new services in 1999, including routes to Copenhagen and Taipei. It launched additional services on a code-share basis to Amman, Amsterdam, Bucharest, Helsinki, Dubai and Abu Dhabi. Air Canada also increased the frequency of its flights between Toronto/Ottawa and London.

In May, Air Canada initiated five weekly non-stop flights between Toronto and Copenhagen. The SAS code is being carried on the transatlantic sector and beyond Toronto, while Air Canada gains access to the destinations beyond the SAS hub at Copenhagen. In June, Air Canada and EVA Air jointly launched a new Vancouver–Taipei non-stop service, with each carrier flying between the two points on alternate days.

In March, Air Canada and Royal Jordanian announced summer plans for code-share service between Canada and Jordan via London. In May, Air Canada and British Midland announced the launch of code-share service to Amsterdam. In August, pursuant to Canada's new bilateral agreement with the United Arab Emirates, Air Canada launched daily code-share service to Dubai and Abu Dhabi in co-operation with Emirates Air.

Air Canada also announced plans to extend its network to Mexico in September, using opportunities gained under the Minister's June 1998 statement.

Further to the Minister's January 1999 statement allowing the designation of a second carrier to serve Taiwan, Air Canada introduced three weekly flights between Vancouver and Taipei in July. Air Canada's new service followed the introduction of three weekly flights by EVA Air in June. Both airlines have agreed to carry the other airline's code on their flights.

Air Canada permanently suspended its London-Delhi service in June. The service had operated four flights per week during the winter traffic season. Capacity on the route was reallocated to the London-Toronto/Ottawa routes. Its Edmonton-London flights were suspended in the fall.

Canadian Airlines also had a few changes in its winter 1999/2000 schedule, taking over Toronto-Milan service from Alitalia, which had introduced service in June following completion of improvements at Milan's Malpensa airport. Under an agreement between the two airlines, Alitalia flies to Milan and Rome during the summer traffic season and Canadian Airlines operates during the winter traffic season. Canadian Airlines' year-round Montreal-Rome service was an exception to this arrangement. In April, Canadian Airlines started daily service from Toronto to Moscow via London in co-operation with British Airways.

At the same time, Canadian Airlines suspended non-stop Toronto-Tokyo service and transferred those frequencies to support its Vancouver-Tokyo service. The airline also announced that it was suspending service to Bangkok and Manila as a result of the new code-share agreement with Cathay Pacific. Services to Manila were suspended in the fall of 1999, and services to Bangkok are scheduled to end in January 2000.

Other changes include the introduction of Toronto-Budapest flights by Malev and Montreal-Bucharest flights by Tarom during the summer. Malaysia Airlines cancelled its Vancouver-Kuala Lumpur flights in January. Iberia suspended its Montreal-Madrid service in October.

In December, Air Canada and Canadian Airlines agreed to the transfer of authorities that would permit the reinstitution of daily non-stop Toronto-Tokyo services. Air Canada indicated that it intended to inaugurate a direct Toronto-Tokyo service in the summer of 2000. Air Canada also announced that it would begin daily Toronto-Hong Kong service and would seek to use dormant authorities for several other routes. All changes planned are subject to the successful negotiation of the necessary route rights with other countries.

Table 13-15 shows the number of international destinations served by scheduled airlines from NAS airports. Note that the bulk of international traffic is concentrated in Canada's three largest cities: Montreal, Toronto and Vancouver.

**TABLE 13-15: CANADA - INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 1998**

Period	(Millions of passengers)			
	Atlantic	Pacific	Southern	Total
1991	4.776	1.000	2.222	7.998
1992	5.221	1.140	2.353	8.714
1993	5.345	1.288	2.444	9.077
1994	5.802	1.478	2.560	9.840
1995	6.147	1.760	2.614	10.521
1996	6.413	1.920	2.574	10.907
1997	6.699	2.304	2.905	11.908
1998	7.124	2.314	3.169	12.607
(Per cent change)				
1991-92	9.3	14.0	5.9	9.0
1992-93	2.4	13.0	3.9	4.2
1993-94	8.6	14.8	3.9	8.2
1994-95	6.0	19.1	3.0	7.2
1995-96	4.3	9.1	(1.5)	3.7
1996-97	4.5	20.0	12.9	9.2
1997-98	6.3	0.4	9.1	5.9

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4, and 6, and Transport Canada

Appendix 13-3 lists the international air services provided to and from Canada as of the end of 1999. These include foreign markets served by Air Canada and Canadian Airlines, as well as Canadian markets served by foreign carriers. This appendix also provides a partial list of foreign markets served by charter air carriers. It shows that 43 countries and territories currently serve same-plane scheduled services from Canada. Canadian air carriers serve 25 of these countries.

## APPENDIX 13-1

## STATUS OF TRANSBORDER SCHEDULED AIR SERVICES BY AIRLINE DOMICILE, 1991 – 1998

Airport	Services Operated in February 1995			Pre-Agreement Services Suspended Since February 1995			Services Added Since February 1995			Services Operated as of December 1999		
	Canada	US	Total	Canada	US	Total	Canada	US	Total	Canada	US	Total
Toronto/Pearson	14	23	37	1	11	12	32	12	44	45	24	69
Vancouver	6	10	16	1	5	6	4	17	21	9	22	31
Montreal/Dorval	7	10	17		3	3	5	6	11	12	13	25
Calgary	4	5	9	1	3	4	5	6	11	8	8	16
Ottawa	1	6	7		4	4	6	4	10	7	6	13
Halifax	2		2				1	2	3	3	2	5
Edmonton		3	3		2	2	2	1	3	2	2	4
Winnipeg	1	1	2				1		1	2	1	3
Others	5	8	13	5	2	7		6	6	0	12	12
<b>Sub-total</b>	<b>40</b>	<b>66</b>	<b>106</b>	<b>8</b>	<b>30</b>	<b>38</b>	<b>56</b>	<b>54</b>	<b>110</b>	<b>88</b>	<b>90</b>	<b>178</b>
Charter conversions	30		30	22		22				8		8
<b>Total</b>	<b>70</b>	<b>66</b>	<b>136</b>	<b>30</b>	<b>30</b>	<b>60</b>	<b>56</b>	<b>54</b>	<b>110</b>	<b>96</b>	<b>90</b>	<b>186</b>

Source: Transport Canada, Air Policy

## APPENDIX 13-2

## STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999

Airport	Current Services Introduced After February 24, 1995	Current Services Operated Before February 24, 1995	Pre-Agreement Services Suspended after February 24, 1995	New Services Subsequently Suspended
<b>Calgary</b>	Chicago: American Chicago: Canadian Denver: United Houston: Air Canada Houston: Canadian Houston: Continental Los Angeles: Canadian Minneapolis: Northwest San Francisco: United Seattle: Alaska (R) Spokane: Air Canada (R)	Chicago: Air Canada Dallas: American Los Angeles: Air Canada Salt Lake City: Delta (R) San Francisco: Air Canada	Denver: Delta Los Angeles: Delta New York/Newark: Air Canada Spokane: United	Denver: Air Canada Las Vegas: Canadian (C) Las Vegas: Delta Palm Springs: Canadian (C) Phoenix: Canadian (C)
<b>Edmonton International</b>	Chicago: Canadian Denver: Air Canada (R) Seattle: Alaska (R)	Minneapolis: Northwest	Dallas: American Salt Lake City: Delta	Las Vegas: Canadian (C)
<b>Fredericton</b>				Boston: Air Canada (R)
<b>Halifax</b>	Boston: Delta (R) New York/Newark: Continental Washington/Dulles: Air Canada	Boston: Air Canada (R) New York/Newark: Air Canada (R)		Boston: Canadian (R) Detroit: Northwest Ft. Lauderdale: Canadian (C) New York/Kennedy: American (R) Orlando: Air Canada (C) Orlando: Canadian (C) St. Petersburg: Canadian (C) Tampa: Air Canada (C)
<b>Hamilton</b>		Pittsburgh: US Airways (R)		
<b>Kelowna</b>	Seattle: Alaska (R)			
<b>Kenora</b>	Minneapolis: Northwest (R)¹			
<b>London</b>		Detroit: Northwest (R) Pittsburgh: US Airways (R)		
<b>Moncton</b>				Boston: Air Canada (R) Boston: Delta (R)
<b>Montreal/Dorval</b>	Atlanta: Delta Cleveland: Continental (R) Ft. Lauderdale: Air Canada (C) Hartford: Air Canada (R) Miami: American Minneapolis: Northwest New York/Kennedy: American (R) New York/Newark: Continental Orlando: Air Canada (C) Portland (Maine): Air Canada (R) San Francisco: Air Canada Washington/Dulles: Air Canada Washington/Reagan: Air Canada	Boston: Air Canada Boston: Delta (R) Chicago: Air Canada Chicago: American Cincinnati: Delta Detroit: Northwest Los Angeles: Air Canada Miami: Air Canada New York/LaGuardia: Air Canada New York/LaGuardia: Delta (R) New York/Newark: Air Canada Philadelphia: US Airways Pittsburgh: US Airways Tampa: Air Canada¹	Baltimore: US Airways Hartford: Delta (R) Miami: Delta	Atlanta: Air Canada Dallas: American New York/Kennedy: Delta Philadelphia: Air Canada (R) Washington/Dulles: Valujet Washington/Reagan: US Airways
<b>Montreal/Mirabel</b>			Boston: Northwest (R)	
<b>Ottawa</b>	Boston: Air Canada (R) Chicago: Air Canada Chicago: American Detroit: Northwest (R) New York/LaGuardia: Air Canada New York/Newark: Continental (R) Philadelphia: US Airways Raleigh: Canadian (R) Washington/Dulles: Air Canada Washington/Reagan: Air Canada	Boston: Delta (R) New York/Newark: Air Canada Pittsburgh: US Airways (R)	Albany: Delta (R) Baltimore: US Airways New York/Kennedy: US Airways (R) Syracuse: US Airways (R)	New York/Kennedy: American (R) New York/LaGuardia: Delta (R) Orlando: Canadian (C) St. Petersburg: Canadian (C)
<b>Quebec City</b>	New York/Newark: Continental (R)	Boston: Delta (R)	New York/Newark: Air Canada (R)	New York/Kennedy: American (R)

Continued



## APPENDIX 13-2 (Continuation)

## STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999

Airport	Current Services Introduced After February 24, 1995	Current Services Operated Before February 24, 1995	Pre-Agreement Services Suspended after February 24, 1995	New Services Subsequently Suspended
Regina	Minneapolis: Northwest (R)		Minneapolis: Canadian (R)	
Saint John			Boston: Canadian (R) New York/Newark: Air Canada (R)	Boston: Delta (R)
Saskatoon	Minneapolis: Northwest			
Thunder Bay		Minneapolis: Northwest (R)		
Toronto Pearson	Allentown: Air Canada (R) Atlanta: Air Canada Atlanta: Delta Boston: Canadian Charlotte: Air Canada Charlotte: US Airways (R) Chicago: Canadian Cleveland: Continental (R) Columbus: Air Canada (R) Columbus: US Airways (R) Dallas: Canadian Denver: Air Canada Ft. Lauderdale: Air Canada (C) Ft. Myers: Air Canada (C) Harrisburg: Air Canada (R) Houston: Continental Kansas City: Air Canada Las Vegas: Air Canada (C) Miami: American Miami: Canadian Milwaukee: Air Canada Milwaukee: Midwest Express Minneapolis: Air Canada Minneapolis: Northwest Nashville: Air Canada New Orleans: Air Canada New York/LaGuardia: Canadian New York/Newark: Continental Orlando: Air Canada (C) Orlando: Canadian Philadelphia: Air Canada Phoenix: Air Canada Pittsburgh: Air Canada Pittsburgh: US Airways Providence: Air Canada (R) Raleigh: Air Canada Raleigh: Canadian (R) Richmond: Air Canada (R) Rochester: Air Canada (R) St. Louis: Air Canada St. Louis: Trans World San Diego: Air Canada San Jose: Air Canada Seattle: Air Canada Syracuse: Air Canada (R) Washington/Dulles: Air Canada Washington/Reagan: Air Canada Washington/Reagan: US Airways West Palm Beach: Air Canada (C)	Baltimore: Air Canada (R) Baltimore: US Airways (R) Boston: Air Canada Chicago: Air Canada Chicago: American Chicago: United Cincinnati: Delta (R) Cleveland: Air Canada Dallas: American Dayton: US Airways (R) Detroit: Northwest Grand Rapids: Midwest Express (R) Hartford: Air Canada (R) Honolulu: Canadian Houston: Air Canada Indianapolis: US Airways (R) Los Angeles: Air Canada Miami: Air Canada New York/LaGuardia: Air Canada New York/LaGuardia: American New York/Newark: Air Canada Philadelphia: US Airways San Francisco: Air Canada San Francisco: United Tampa: Air Canada	Albany: Delta (R) Boston: US Airways Cleveland: US Airways (R) Hartford: Delta (R) Miami: Delta Nashville: American Pittsburgh: Delta Rochester: US Airways Syracuse: Delta (R) Tampa: Delta Washington/Dulles: Canadian (R) Washington/Dulles: Delta (R)	Boston: Delta (R) Cincinnati: Air Canada Dallas: Air Canada Ft. Lauderdale: Canadian (C) Ft. Myers: Canadian (C) Indianapolis: Air Canada (R) Nashville: Delta (R) Saginaw: Midwest Express (R) St. Petersburg: Canadian (C) Sarasota: Canadian (C) Tampa: American Tampa: Canadian Washington/Reagan: US Airways West Palm Beach: Canadian (C)
Toronto City Centre				Syracuse: US Airways (R)

Continued

**APPENDIX 13-2** (Continuation)**STATUS OF TRANSBORDER AIR SERVICES AS OF DECEMBER 31, 1999**

<i>Airport</i>	<i>Current Services Introduced After February 24, 1995</i>	<i>Current Services Operated Before February 24, 1995</i>	<i>Pre-Agreement Services Suspended after February 24, 1995</i>	<i>New Services Subsequently Suspended</i>
<b>Vancouver</b>	Boston: Canadian Chicago: Canadian Dallas: American Dallas: Canadian Denver: United Detroit: Northwest <sup>1</sup> Honolulu: Air Canada (C) Houston: Continental Kahului/Maui: Air Canada (C) Las Vegas: Alaska Los Angeles: Alaska Los Angeles: United Minneapolis: Northwest New York/Kennedy: American New York/Newark: Continental <sup>1</sup> Palm Springs: Alaska <sup>1</sup> Phoenix: Alaska <sup>1</sup> Phoenix: America West St. Louis: Trans World <sup>1</sup> Salt Lake City: Delta (R) San Francisco: Air Canada San Francisco: Alaska San Francisco: United	Chicago: United Honolulu: Canadian Los Angeles: Canadian Portland: Air Canada (R) Portland: Alaska (R) Portland: Delta (R) San Francisco: Canadian Seattle: Air Canada (R) Seattle: Alaska (R) Seattle: United (R)	Bellingham: Alaska (R) Los Angeles: Delta San Francisco: Delta San Jose: American Seattle: Canadian (R) Spokane: Northwest	Atlanta: Delta Cincinnati: Delta Denver: Air Canada Las Vegas: America West Las Vegas: Canadian Los Angeles: Air Canada Miami: American Palm Springs: Canadian (C) Portland: Canadian (R) Reno: Reno Air Reno: Canadian (C) San Diego: Alaska San Diego: Canadian San Jose: Canadian (R)
<b>Victoria</b>		Seattle: Alaska (R)	Port Angeles: Alaska (R)	Seattle: Air Canada (R)
<b>Whitehorse</b>	Anchorage: Alaska (R) <sup>1</sup>			
<b>Winnipeg</b>	Denver: Air Canada (R)	Chicago: Air Canada Minneapolis: Northwest		Chicago: American Las Vegas: Canadian (C) Orlando: Air Canada (C) Palm Springs: Canadian (C)
<b>Yarmouth</b>			Boston: Air Canada (R)	

Notes: (R)- Denotes services operated by regional affiliates.

(C)- Denotes charter services operated by Air Canada and Canadian Airlines before February 24, 1995.

<sup>1</sup> Seasonal Service.

Source: Transport Canada, Air Policy

## APPENDIX 13-3

## INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 1999 (EXCLUDING CANADA-US TRANSBORDER AIR SERVICES)

Sector	Foreign Points Served by Canadian Air Carriers <i>Air Canada</i>	Canadian	Canadian Points Served by Foreign Air Carriers	Major Charter Air Services
Atlantic	Copenhagen Frankfurt Glasgow London Manchester Paris Tel Aviv Zurich	London Milan Rome	Aeroflot: Montreal, Toronto Air France: Montreal, Toronto Air Ukraine: Toronto Alitalia: Toronto British Airways: Montreal, Toronto, Vancouver Czech Airlines: Montreal, Toronto El Al: Montreal, Toronto Icelandair: Halifax KLM: Montreal, Toronto, Vancouver Lufthansa: Toronto, Vancouver Malev: Toronto Olympic: Montreal, Toronto Pakistan International: Toronto Royal Air Maroc: Montreal Sabena: Montreal Swissair: Montreal TAROM: Montreal	Amsterdam Frankfurt Glasgow Lisbon London Manchester Paris Warsaw
Pacific	Hong Kong Osaka Seoul Taipei	Bangkok Beijing Hong Kong Nagoya Taipei Tokyo	Air China: Vancouver Cathay Pacific: Toronto, Vancouver Eva Airways: Vancouver Japan Airlines: Vancouver Korean Air: Toronto, Vancouver Mandarin: Vancouver Singapore Airlines: Vancouver	
Southern	Antigua Barbados Bermuda Fort-de-France Kingston Montego Bay Nassau Pointe-a-Pitre Port-au-Prince Port of Spain St. Lucia	Buenos Aires Mexico City Sao Paulo	BWIA: Toronto Cubana: Montreal, Toronto LACSA: Toronto Mexicana: Montreal, Toronto VASP: Toronto	Acapulco Aruba Cancun Ciego de Avila Holguin Ixtapa Manzanillo Mazatlan Montego Bay Nassau Puerto Plata Puerto Vallarta Punta Cana Santo Domingo Varadero
Other	Air Transat: Paris First Air: Kangerlussuaq		Air St. Pierre: Halifax, Montreal, St. John's, Sydney Greenlandair: Iqaluit	

Source: Transport Canada; Air Policy

# PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR 14

*Between 1991 and 1998, productivity in transport industries has grown each year. When markets are competitive and efficient, productivity gains can be passed on, partially or totally, to users in the form of lower prices.*

The transport sector's economic performance gives a clear picture of this sector's contribution to the entire economy.

The economic performance of a sector can be determined by productivity gains over time and by the distribution of those gains among various economic agents. Of particular interest are the productivity gains passed on to users as lower prices. Table 14-1 shows the performance indicators for selected transport industries between 1991 and 1999.

**TABLE 14-1: PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY**

	Annual per cent	
	1991 - 1998	1998 - 1999
<b>Productivity</b>		
Selected Transport Industries	2.5	0.2 <sup>1</sup>
Business Economy	1.7	1.5 <sup>2</sup>
<b>Price</b>		
Selected Transport Industries	(0.4)	1.4 <sup>3</sup>
Business Economy	1.6	1.5 <sup>3</sup>
<b>Output</b>		
Selected Transport Industries	6.4	5.4 <sup>3</sup>
Business Economy	3.1	2.6 <sup>2</sup>

<sup>1</sup> Change from 1997 to 1998.

<sup>2</sup> Preliminary estimate.

<sup>3</sup> Based on first half of the year 1999.

Source: Transport Canada, based on Statistics Canada files

Between 1991 and 1998, productivity growth in transport industries averaged 2.5 per cent a year. In 1998, this slowed to 0.2 per cent.

When markets are competitive and efficient, productivity gains can be passed on, partially or totally, to users in the form of lower prices. Between 1991 and 1998, the prices of selected transport industries<sup>1</sup> fell in real terms by 0.4 per cent per year. In 1999, the prices of the same firms increased nominally by 1.4 per cent. Part of the increase

in transport demand since 1991 has come from the upturn of the economy. However, lower transport prices also contributed by generating stronger demand. Between 1991 and 1998, the output of large transport firms advanced annually by 6.4 per cent.

The rest of this chapter discusses the individual performance of each transport industry, giving highlights of the most recent year for which data is available and reviewing performance indicators. The analysis of the performance of the shipping industry could not be updated to 1998 as a result of data limitations.

Key statistics for each transport industry are presented in tabular form at the end of this chapter. Table 14-11 presents price and output indicators; Table 14-12 presents user and cost savings. Table 14-13 presents productivity and unit costs indicators, and Table 14-14 presents cost structures.

## RAIL INDUSTRY

### THE FREIGHT RAIL INDUSTRY

Freight railways in Canada generate a total of \$7 billion in revenues annually. Of this, the two mainline railways combined account for 90 per cent, while the regional/short line railways account for the remaining ten per cent.

This report focuses on the performance of Canadian National and Canadian Pacific Railways' Canadian operations, although the financial analysis does include a brief discussion of the performance of regional/shortline railways.

<sup>1</sup> Larger firms in rail freight, air and trucking account for 92 per cent of the revenues of all the firms reviewed in this chapter.



## OUTPUT AND PRICE CHANGES

In the first three quarters of 1999, CN and CPR's rail freight output increased by 3.6 per cent over the same period in 1998. This was due to the recovery of grain traffic and growth in intermodal, automotive and forest products. Between 1991 and 1998, the average annual growth rate of railway output was about two per cent.

Rail service prices stayed at their 1997 level in 1998, but declined by four per cent in the first nine months of 1999. In 1998, the average rail price was seven per cent lower than in 1991, an indication that shippers received some of the benefits in productivity gain that the railways had achieved. Since 1991, the price performance of the two mainline railways has allowed rail freight costs of shippers to be reduced by an estimated \$1.1 billion. This is equivalent to a 17 per cent reduction in their rail freight bills between 1991 and 1998.

By commodity groups, however, freight prices have fluctuated, reflecting commodity-specific market factors. Figure 14-1 compares changes in rail freight prices for selected commodity groups from 1991 to 1998: grain, bulk (primary commodities, except grain) and non-bulk (including semi-fabricated products, finished goods and intermodal). It shows that the average rail freight rate of grains has increased by ten per cent since 1995. Because of significant declines in 1994 and 1995, however, the average grain freight rate in 1998 was only two per cent higher than in 1991. Freight rates of other bulk and non-bulk commodities are lower than 1991 levels.

FIGURE 14-1: RAIL FREIGHT PRICE INDICES BY COMMODITY GROUP, 1991 – 1998



Sources: Transport Canada and Statistics Canada, "Rail In Canada"

## COST STRUCTURE

The total cost of Canadian rail freight operations can be broken down into variable costs and capital or fixed costs. In 1998, variable costs, such as labour, fuel, and other materials and services accounted for 73 per cent of total costs; capital or fixed costs, including depreciation and leasing expenses, debt costs and return to equity, accounted for the remaining 27 per cent.

Railway labour costs, as a percentage of total costs, declined from 40 per cent to 36 per cent between 1991 and 1998. Increases in costs of other materials and purchased services exceeded the drop in the labour cost share. The share of fuel cost remained stable at around eight per cent of total costs. The capital cost share was lower in 1998 than in 1991 because of lower interest rates.

## COST AND PRODUCTIVITY INDICATORS

Following strong productivity growth in 1996 and 1997, CN and CPR continued to show significant productivity gains in 1998. The upward trend was primarily due to more efficient use of variable inputs. The variable factor productivity, which compares output growth with the growth of aggregate non-capital inputs such as labour, fuel and materials, increased by 6.6 per cent in 1998. Labour was the main contributor to total productivity growth of the Class I freight railways in 1997, but was surpassed by greater efficiency in fuel use and material inputs in 1998.

Over the past decade, labour productivity improvements in the rail industry have been achieved mostly through workforce reductions.<sup>2</sup> The two mainline freight railways have, in recent years, pursued further workforce restructuring plans. For instance, in 1998–1999, CN reduced its workforce by 3,000 and CPR announced a job reduction plan in the second quarter that affected 1,900 employees.

The partial productivity of capital inputs declined by 3.8 per cent in 1998 from 1997. This was partly attributable to a large amount of railway investment in new locomotives and rolling stock, but was somewhat moderated by productivity gains in variable inputs.

Total factor productivity of Class I railways increased by 3.5 per cent in 1998. Since 1991, it has improved by 27 per cent.

2 In this report, an adjustment was made to historical labour input quantities in order to be in accord with the railways' amortisation schedules of special charges related to workforce reduction. The adjustment has an impact on the annual labour and total factor productivity estimations from 1992 to 1997, but it does not change the overall conclusion that Canadian railways have had significant labour productivity and total productivity gains over this period.

The unit cost curve of railways has shown a downward trend since 1991, with an average annual rate of reduction of 2.7 per cent. Lower unit costs have allowed both CN and CPR to offer competitive prices and improve their financial performance at the same time. With 1991 as the base year, productivity performance has allowed the rail industry to achieve total costs in 1998 that are \$2.1 billion lower than they would have been without the productivity improvement. These savings are significant, as they represent 32 per cent of the industry cost base.

## FINANCIAL PERFORMANCE

In recent years, long-term benefits from productivity gains have allowed the rail industry to substantially improve their profitability. The Canadian operations of CN and CPR continued to show improved financial performance in 1999, based on results from the first nine months. Excluding special charges, their average operating ratio was at 79 per cent, a three per cent improvement over the same period in 1998. Both CN and CPR reported record fourth quarter financial results on a system consolidated basis.

Table 14-2 shows the financial results of the rail freight industry's Class I and regional/shortline railways.

TABLE 14-2: THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS

	1991	1996	1997	1998
<b>Class I Railways – Canadian Operations</b>				
Revenue (\$ millions)	6,019	6,150	6,778	6,436
Expenses (\$ millions) <sup>1</sup>	5,559	5,215	5,664	5,289
Operating Income (\$ millions)	460	934	1,114	1,147
Operating Ratio (per cent)	92.4	84.8	83.6	82.2
<b>Regional/Shortline railways</b>				
Revenue (\$ millions)	628	680	727	744
Expenses (\$ millions) <sup>1</sup>	477	643	647	644
Operating Ratio (per cent)	76.1	94.5	89.0	86.6

<sup>1</sup> excludes special charges

Sources: Transport Canada and Statistics Canada, "Rail In Canada"

Total freight revenues declined by five per cent in 1998. Despite this, however, the 1998 average operating ratio of CN and CPR in Canadian operations was reduced to 82 per cent, from 84 per cent in 1997, reflecting major cost reduction efforts.

Total combined operating income of CN and CPR rose to \$1.1 billion (excluding special charges) in 1998, up by three per cent from 1997.

To facilitate yearly comparisons, extraordinary items are excluded, but they are noted for their significant amounts. CN took a special charge of \$590 million in 1998, while

CPR incurred special charges of \$501 million in the second quarter of 1999, both related to workforce reductions. While these reductions are system-wide, most have been carried out in Canadian operations.

With the purchase of Illinois Central Railways in the US, the Canadian operation of CN now represents about 68 per cent of total CN North America in percentage of total system revenues. CPR revenues from Canadian operations represent 73 per cent of its total system revenues.

Regional railways also benefited from a strong Canadian economy in 1998. That same year, Class II railways' total revenues and expenses were \$744 million and \$644 million, respectively. Compared with 1997, revenues increased by 2.3 per cent and expenses remained at close to the same level. Operating ratios improved from 89 per cent in 1997 to 87 per cent in 1998. The revenue growth in 1998 was partly attributable to new shortline railways, which started up in late 1997 and in 1998. These railways primarily serve local rail freight markets.

## VIA RAIL

VIA Rail generated operating revenues of \$217 million in 1999, an increase of ten per cent from the same period in 1998, with strong growth in the Quebec–Ontario corridor and the west.

## OUTPUT AND PRICE CHANGES

Since 1991, VIA Rail has achieved notable growth in operating revenues mainly through price increases. This trend continued in 1998 as VIA Rail's aggregate prices climbed by 7.2 per cent while output declined by 2.4 per cent.

From 1991 to 1998, the price of rail passenger services increased on average by 4.8 per cent a year, a rate that exceeded the overall inflation trend. These price increases have meant that VIA Rail's passengers contributed \$37 million to the reduction of its operating deficits. Rail passenger service demand was up in the mid-1990s, especially for long haul services, but the different rail passenger markets either became stagnant or declined in the last two years. As a result, VIA Rail's output in 1998 was about 0.2 per cent lower than in 1991.

By market, the long haul services recorded the strongest price increases, with an average of seven per cent a year from 1991 to 1998. Over the same period, prices within the corridor services showed an average increase of four per cent a year, whereas remote regional services faced more modest price increases of 2.9 per cent a year.

## COST STRUCTURE

VIA Rail's total costs are made up of variable costs (79 per cent) and capital costs (21 per cent). Total variable costs can be broken down into labour, fuel, marketing, payments to carriers, and other materials and services. There have been no significant changes in VIA Rail's cost structure from 1991 to 1998.

In 1998, labour remained VIA Rail's largest cost component, representing 39 per cent of its total costs. In dollar terms, total labour costs are about equivalent to VIA Rail's total passenger revenues. Fuel costs declined during 1998 to 3.6 per cent of total costs as a result of lower fuel prices.

Marketing costs (promotion and commissions to ticket agents) accounted for six per cent of total costs and correspond to 14 per cent of VIA Rail's passenger revenues. Payments to carriers represented 12 per cent of VIA Rail's costs. The remaining variable costs consist of non-income taxes (three per cent) and a residual category accounting for 17 per cent of VIA Rail's costs.

VIA Rail's capital cost share, including the estimated opportunity cost of its capital, is the third highest in the transport sector, after that of CN and CPR and transit systems.

## COST AND PRODUCTIVITY INDICATORS

VIA Rail's total factor productivity increased by 32 per cent between 1991 and 1998, with most productivity gains achieved in 1994 and 1995. This robust productivity performance has allowed it to reduce its costs in nominal terms by \$117 million since 1991, which was equivalent to 73 per cent of the subsidy reduction. In real terms, the cost reduction is \$172 million, or 36 per cent of VIA Rail's cost base.

Labour, fuel, services supplied by CN and CPR, and other materials and services are combined as one "variable" factor of production of rail passenger services. This eliminates substitution effects between these factors. During the 1991 – 1998 period, the productivity of this variable factor increased on average by 3.5 per cent a year.

Labour productivity at VIA Rail grew on average by an impressive four per cent a year, despite a decline in 1998. The productivity levels of VIA Rail can be compared with those of other transport sectors in more than one way. As Table 14-3 shows, when revenues per employee, in constant dollars, are used as the basis of comparison, the employees of regional airlines affiliated with Air Canada and Canadian Airlines International produced 3.7 times more revenues than VIA Rail employees in 1997. Intercity

bus employees generated 53 per cent more revenues. These comparisons suggest that the strong growth of VIA Rail's labour productivity may have resulted from untapped productivity slack.

**TABLE 14-3: REVENUES PER EMPLOYEE FOR VIA RAIL, REGIONAL AIRLINES AND THE BUS INDUSTRY**

	(Constant 1991 dollars)	
	1991	1997
VIA Rail	30.4	42.8
Regional Airlines	115.1	156.7
Intercity Bus Industry	57.7	65.3

Sources: Transport Canada based on VIA Rail and Canadian Transportation Agency files

## FINANCIAL PERFORMANCE

VIA Rail received \$167 million in operating subsidies in 1998, only about half of the amount it received in 1991. Its cost recovery ratio, with the cost of capital accounted for, rose from 24 per cent to 41 per cent in the same period, as shown in Table 14-4.

**TABLE 14-4: VIA RAIL'S FINANCIAL PERFORMANCE RESULTS**

	1991	1996	1997	1998
Operating Revenues (\$ millions)	145	175	188	197
Operating Expenses (\$ millions) <sup>1</sup>	506	433	429	438
Total Cost (\$ millions)	596	488	487	479
Cost Recovery Ratio (per cent) <sup>2</sup>	24.3	35.9	38.6	41.1
Operating Subsidies (\$ millions)	328	205	196	167

Notes:

1 Includes depreciation, but excludes extraordinary charges.

2 Operating Revenues divided by Total Cost.

Source: Transport Canada, based on Statistics Canada files

From 1991 to 1997 inclusively, VIA Rail was able to maintain a positive cash flow position. This was not the case, however, in 1998. With the reduction in government funding in 1998, the carrier has had to draw about \$15 million from its Asset Renewal Fund to cover its cash shortage for its operating expenses.

## TRUCKING INDUSTRY

The focus for the trucking industry is on the performance of for-hire trucking firms with annual sales equal to or greater than \$1 million. The following analysis excludes individual carriers whose main activity is the movement of household goods (four per cent of larger carrier revenues).

## PRICE AND OUTPUT INDICATORS

From 1991 to 1998, trucking industry revenues increased by 8.8 per cent a year. This growth came from an increased



level of activity and not an increase in prices, which were declining marginally at 0.5 per cent a year. In real terms, the price decline was actually 2.1 per cent a year. Since 1991, price increases for trucking services were observed in only two years. The price reductions observed in the for-hire trucking activity since 1991 allowed a reduction in shippers' trucking costs by \$1.8 billion (12 per cent) by 1998.

Preliminary results for the first half of 1999 show that revenue growth continued to be strong with trucking prices firming up.

There has been little significant difference in the price changes of domestic intraprovincial versus interprovincial trucking services over the 199–1998 period. The prices for transborder trucking services, however, have shown a nominal increase of 0.7 per cent a year since 1991.

The growth of transborder trucking activities by Canadian-based carriers has been remarkable, with output growth averaging 15 per cent a year. This is the result of three factors: the growth of transborder trade, which reached eight per cent a year; the deeper penetration of the US market (measured by the longer distance travelled by goods transported by road between Canada and the US), which rose by two per cent a year; and market share gains by Canadian-based carriers in transborder activities, as indicated by the increased share of Canadian licenced commercial road vehicles crossing the Canada–US border. This third factor would have contributed to about one quarter of the growth of Canadian trucking firms in transborder operations.

Output growth from domestic markets has been about half the growth of transborder output over the 1991–1998 period. In 1998 and 1999, however, the domestic activity of the trucking industry surpassed that of transborder markets, reflecting the increasing strength of domestic markets.

## COST STRUCTURE

As with VIA Rail, the variable factors of production in the trucking industry (i.e. labour, fuel, purchased transport services and other materials and services) have been grouped to avoid measurement problems arising, for instance, from potential substitution between internal labour versus outsourcing. In 1998, variable costs accounted for 89 per cent of industry costs; capital cost, which is all capital goods used by trucking firms whether owned or leased, made up the remaining 11 per cent. In 1991, capital costs accounted for 14 per cent of total costs.

Among variable factors, labour accounts for 46 per cent of total costs, down from 48 per cent. The fuel cost share increased from 12 to 13 per cent between 1991 and 1998.

## PRODUCTIVITY AND UNIT COST INDICATORS

Total factor productivity in the trucking industry increased by 2.1 per cent a year between 1991 and 1998. Trucking unit costs in 1998 were seven per cent lower than in 1991. In more recent years, industry performance in terms of productivity and unit costs has exceeded the longer-term trends. Since 1991, this cost performance allowed the trucking industry to reduce its costs by \$2.2 billion in 1998, or 15 per cent of its cost base.

Since the prices attached to the variable factors of production used in trucking operations follow the price trends in the economy, the source of cost reduction in trucking came from productivity improvement in the use of these variable factors of production. This productivity growth of the variable factors of production is not the result of capital substitution, since capital productivity also grew. While this is indicative of a more efficient use of assets, it may also be partly the reflection of the average age of the capital stock used in the industry. The reduction of the cost of capital from lower interest and tax rates is also a contributing factor.

Capital contributed to 27 per cent of the cost reduction of trucking firms, which is more than twice its importance in the total costs of the industry.

## FINANCIAL PERFORMANCE

Trucking is an industry whose viability can be achieved with an operating margin equal to about four per cent of its revenues. Other transport industries, such as rail, require higher operating margins, as more assets are needed to generate each dollar of revenue.

Between 1991 and 1996, the financial performance of the trucking industry was relatively stable, with 95 per cent of its cost reduction returned to users as lower prices. Since 1996, the industry has been able to retain more than half of its cost reductions. The improvement of the financial situation in the last two years may appear modest, when measured by the reduction in operating ratios of 2.2 percentage points, as shown in Table 14-5. This contributed to a 57 per cent increase in return on assets.

TABLE 14-5: THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS

	1991	1996	1997	1998
Operating Revenues (\$ millions)	8,007	12,602	13,704	14,433
Operating Expenses (\$ millions)	7,755	12,193	13,063	13,643
Operating Income (\$ millions)	252	410	641	790
Operating Ratio (per cent)	96.9	96.7	95.3	94.5
Return on Assets (per cent)	11.7	12.7	18.7	19.9

Sources: Transport Canada, based on Statistics Canada files



Based on the performance of large trucking carriers in the first three quarters of 1999, profitability should have improved in 1999. The operating ratio of the larger carriers fell by one percentage point, however, from 95.8 to 94.8 per cent.

## THE BUS INDUSTRY<sup>3</sup>

The bus transport industry is made up of three segments: intercity bus services, school bus services, and urban transit services. The activities of school bus operators are not covered in this chapter.

### INTERCITY BUS INDUSTRY

The distinction in the analysis between scheduled and charter intercity bus service operators has been dropped. It was becoming increasingly blurred as more and more carriers offered both types of services and/or data reported under scheduled or charter operations included more and more significant portions of revenues emanating from a mix of the two types of services.

### PRICE AND OUTPUT INDICATORS

Intercity bus industry revenues, after several years of relative stability, jumped by 12 per cent in 1998, due to a 13 per cent increase in outputs. Industry revenues were generated by passenger services (84 per cent), parcel services (12 per cent) and various other activities (four per cent).

Scheduled bus services had a 40 per cent share of passenger service revenues in 1998. In 1991, their revenue share was as high as 56 per cent. The revenue share of charter and tour services reached 45 per cent in 1998. The biggest source of growth is the specialized services such as limousine and sightseeing. This market segment had a 15 per cent share of passenger services in 1998, up from only ten per cent in 1991.

Changes in demand level for each type of intercity bus service appear to be related to price changes observed for the services over time. Demand for scheduled intercity bus services has fallen by 23 per cent since 1991 while nominal prices for the same services have gone up by 5.4 per cent. Conversely, over the same period, the prices of other bus services have fallen by 20 per cent, while activity levels have increased by 93 percent.

Over the 1991 – 1998 period, the bus industry's output increased by 2.6 per cent a year, while its prices declined by 0.9 per cent.

## COST STRUCTURE

The cost structure of the bus industry has remained stable over time. Labour costs represented about 39 per cent of the industry's total in 1998, compared with 40 per cent in 1991. In 1998, fuel costs represented 8.5 per cent, versus 8 per cent in 1991. Other operating costs, which include marketing, materials other than fuel, insurance and other miscellaneous expenses, amounted to 36 per cent of total costs in 1998, compared with 35 per cent in 1991. The share of capital costs (leasing, depreciation, and financing) has varied within an 18 to 19 per cent range.

### PRODUCTIVITY AND UNIT COST INDICATORS

Between 1991 and 1998, both variable and total factor productivity in the bus industry increased by 3.9 per cent a year. The productivity gains, combined with moderate factor price increases, led to unit cost declines of two per cent a year. Each factor of production contributed to the reduction of total costs, as a proportion close to their share of total costs.

Since 1991, bus industry costs have been reduced by \$168 million from the level that they would have reached in 1998, if the industry had not achieved productivity gains. This cost reduction is equivalent of 24 per cent of industry costs in 1998.

### FINANCIAL PERFORMANCE

Table 14-6 shows that in the early 1990s, the industry had high operating ratios, in excess of 95 per cent. Its operating margins were then below the long-term viability level. Since 1994, the industry has achieved operating ratios generating viable returns. This turnaround was achieved in an environment of slow growth/declining demand and falling prices. Productivity gains made by the industry were directly responsible for the improvement in industry profitability, even if more than two thirds of the industry productivity gains were returned to users in lower prices.

TABLE 14-6: SUMMARY OF FINANCIAL INDICATORS FOR ALL INTER-CITY BUS INDUSTRIES

	1991	1996	1997	1998 <sup>1</sup>
Operating Revenues (\$ millions)	593	617	593	664
Operating Expenses (\$ millions)	566	566	533	588
Operating Ratio (per cent)	95.4	91.8	89.8	88.5

<sup>1</sup> Preliminary estimate.

Sources: Transport Canada, based on Statistics Canada files

3 The 1995 – 1997 data have been revised to reflect the new North American Industry Classification System.

## URBAN TRANSIT SYSTEMS

Urban transit service operators are members of the Canadian Urban Transit Association. Total operating revenues, including operating subsidies, have grown by 1.4 per cent a year between 1991 and 1998.

### PRICE AND OUTPUT INDICATORS

Between 1991 and 1996, the output of transit systems, measured by the number of passengers and vehicle-kilometres, declined by a combined<sup>4</sup> 1.5 per cent a year. Since 1997, output has rebounded, advancing annually by 1.9 per cent. There is a similar break in price trends. Between 1991 and 1996, prices increased by 5.1 per cent a year. After 1996, price increases slowed to less than 1.8 per cent a year. Overall, between 1991 and 1998, transit prices increased on average by 4.2 per cent a year, or 3.6 per cent a year in real terms. This real increase represented an additional disbursement of \$258 million by 1998 for the riders of transit systems.

### COST STRUCTURE

Labour costs, accounting for as much as 54 per cent, represent the largest component of total transit costs in 1998. Transit systems are thus the most labour-intensive industry of the transport sector. All other transport sectors have an average 38 per cent labour cost share. Simulating the average salary of the intercity bus industry on transit systems would reduce labour costs by about \$845 billion, or 41 per cent of total costs.

Urban transit is the second most capital intensive industry in the transport sector after rail freight. Capital costs account for more than one quarter of the total costs in 1998.

The larger labour and capital cost shares are offset by the lower share of "other materials and services," an indication that outsourcing is not as important in the management of transit systems as it is in other transport sectors.

### PRODUCTIVITY AND UNIT COST INDICATORS

In the early 1990s, up to 1996, the total factor productivity of transit systems declined by 1.1 per cent a year. In recent years, however, overall productivity has risen by 1.8 per cent a year. The performance of the variable factors of production has been even more robust. While overall productivity declined by 1.9 per cent between 1991 and 1998, that of the variable factors rose by 7.4 per cent. The productivity decline of capital, 28 per cent, reflects the increased capitalization of transit systems.

Per unit of output, transit unit costs rose at 3.8 per cent a year until 1996. This increase exceeded the general inflation rate of 1.6 per cent. Compounded over five years, the gap was equivalent to \$365 million in 1996. Two years later, this was reduced to about \$117 million, as unit costs declined annually by 1.4 per cent. Over the 1991 – 1998 period, urban transit unit costs increased by 2.3 per cent a year. The contributions of labour and capital costs to the total cost increase were 139 per cent and 133 per cent, respectively. Other variable costs had to decline by the equivalent of 172 per cent of the total cost increase.

### FINANCIAL PERFORMANCE

The total cost of transit systems was estimated at \$3.7 billion in 1998, as shown in Table 14-7. Cash operating costs were \$2.8 billion. Users paid 47 per cent of the total cost of the system. Their share of total costs has been rising steadily since 1991, except for a dip in 1993. While operating subsidies have been relatively stable, there has been a strong upward trend in capital costs.

TABLE 14-7: SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS, 1991 – 1998

	(Millions of dollars)			
	1991	1996	1997	1998
Operating Revenues	1,416	1,621	1,712	1,744
Cash Operating Expenses	2,748	2,790	2,788	2,789
Capital Cost	691	837	876	918
Total Cost	3,440	3,627	3,665	3,707
Operating Subsidies	1,557	1,561	1,495	1,523
Capital Subsidies	486	494	641	858
Cost Recovery Ratio (per cent)	41.2	44.7	46.7	47.0

Source: Transport Canada, based on Statistics Canada files

### PERFORMANCE OF TRANSIT SYSTEMS IN SELECTED PROVINCES

Table 14-8 compares key indicators of the performance of transport systems for selected provinces: British Columbia, Alberta, Ontario and Quebec. The transit systems of other provinces are small; together, they account for 5.1 per cent of transit passenger revenues. More importantly, the analyses of individual provinces' systems were restricted by data limitations.

Users of Ontario transit systems pay the highest prices, while those in Alberta pay the lowest. The reverse is true in terms of demand growth, with Ontario showing the strongest growth and Alberta the weakest. Per unit of output, British Columbia has the highest costs, followed by Ontario. In keeping with its lower prices, Alberta has the

4 The two indicators of passengers and distance run have been averaged in a combined indicator.

TABLE 14-8: FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES

	Que.	Ont.	Alta.	B.C.	Total <sup>2</sup>
1998 Price <sup>1</sup> levels (Canada = 100.0)	84.1	118.7	72.8	94.8	100
1991-98 Output increase <sup>1</sup> (per cent)	27.3	45.4	9.2	12	100
1998 Total factor productivity (Canada = 100.0)	107.7	97.5	88.6	111.8	100
1998 Total unit cost (Canada = 100.0)	96.4	105.8	80.1	113.7	100
1998 Cost recovery (per cent)	41.3	52.2	43.5	39.4	47
1998 Revenue shortfall (millions of dollars)	571	865	151	297	1,963

<sup>1</sup> Based on the average index of passengers and distance run.<sup>2</sup> Includes the rest of Canada.

Source: Transport Canada, based on Statistics Canada Files

lowest unit costs. Quebec has the second lowest unit costs, but the strongest productivity.

In 1998, the revenue shortfall of all systems was close to \$2 billion. Ontario transit systems had the highest cost recovery of all systems, at more than 50 per cent of their total costs, and Ontario's users paid the highest transit prices. British Columbia and Quebec had the lowest cost recovery, the former because of its higher unit costs, the latter because of lower prices.

## AIR TRANSPORT INDUSTRY

Over the past two years, the Canadian air industry has undergone a series of mergers and acquisitions aimed at improving productivity and financial viability through restructuring.

In 1998 and early 1999, both Air Canada and Canadian Airlines International restructured their regional affiliates. Air Canada merged its two eastern regional carriers, Air Nova and Air Alliance, while Canadian Airlines sold one of its regional affiliates, Inter-Canadien, and legally amalgamated two others, Time Air and Ontario Express,<sup>5</sup> into Canadian Regional.

As the financial viability of Canadian Airlines and its affiliates became precarious in 1999, further restructuring was initiated. On August 13, 1999, the federal government established a special process to facilitate the orderly restructuring of the airline industry. Further details are presented in Chapter 11, *Structure of Transportation Industry*.

This section does not analyze the performance of individual carriers in detail, but instead looks at the industry's overall performance. Because of limited data, the industry is taken to be most of level I and II air carriers<sup>6</sup> for the purpose of this section. This group accounts for 82 per cent of total industry revenues. In 1998, these carriers generated total revenues of \$10 billion, an increase of 7.6 per cent from 1997. However, falling productivity and significant increases in factor prices resulted in a sharp decline in industry profitability.

## PRICE AND OUTPUT INDICATORS

In the first six months of 1999, output grew by 2.0 per cent whereas prices increased by 4.9 per cent. In 1998, the aggregated airline price and output levels were affected by a labour dispute at Air Canada and by several external factors, including a severe ice storm in eastern Canada, a weaker trans-Pacific market, stiffer price competition in domestic and international markets, and the replacement of the Air Transportation Tax (ATT) by NAV Canada fees. Overall, in 1998, the industry had an average price increase of 3.3 per cent and output increase of 6.1 per cent.

Part of the price increase was due to the implementation of NAV Canada air navigation fees. Prior to the privatization of air navigation services, navigation fees had been added to the price of air tickets paid by consumers in the form of the Air Transportation Tax, the proceeds of which funded those services.<sup>7</sup> Since March 1998, air navigation fees are no longer secluded as a tax but are included in the operating expenses of the carriers, and the carriers in turn recover them through the prices they charge. Previously, the Air Transportation Tax was not taken into account in the analysis of air prices. It is estimated that the new air navigation fees explains most of the price increases of the carriers. But, since these fees replaced the Air Transportation Tax, the net price increase in 1998 was close to zero. Consumers have benefited from the new system. Using 1997 traffic to simulate the differences between the Air Transportation Tax and NAV Canada fees, the air navigation fees, as revised in September 1999, would produce approximately ten per cent less revenues than the Air Transportation Tax.

Table 14-9 shows the effect of navigation fees on air carriers' revenues by sector. On average, the new

<sup>5</sup> Ontario Express operated under the name "Canadian Partners."<sup>6</sup> Air Canada, Canadian Airlines, Air Nova, Air Atlantic, Air Alliance, Inter-Canadien, Air Ontario, Ontario Express, Time Air, Air BC, Air Transat, Canada 3000, Royal Air and WestJet. The last four carriers are not included in the productivity and cost analyses.<sup>7</sup> The Air Transportation Tax was reduced by approximately one half in March 1998, and subsequently eliminated in November 1998. Correspondingly, the new fees introduced by NAV Canada were set at 50 per cent of fees required to achieve the recovery of the services.



NAV Canada fees are estimated to have increased carriers' prices by 2.6 per cent. The largest impact was on domestic services, the prices of which rose by as much as 3.6 per cent. The impact is larger on domestic services, since distance on the Canadian territory, a key parameter of the navigation fees, is shorter on international flights.

TABLE 14-9: IMPACT OF NAVAID FEES ON CANADIAN CARRIERS'

	Per cent of revenues	Millions of dollars
Domestic	3.6	150.0
Transborder	1.7	33.2
Other International	1.7	48.0
<b>Total</b>	<b>2.6</b>	<b>231.2</b>

1 NAV Canada began to charge the fees in March 1998.

Source: Transport Canada

From 1991 to 1998, output of the airline industry increased by 51 per cent, while average prices increased by only 2.5 per cent. The prices of domestic passenger services rose by 3.4 per cent; once the effect of the NAV Canada fees is accounted for, domestic passenger prices in 1998 were at about the same nominal level as in 1991. This corresponds to an 11.5 per cent decline in real terms and has stimulated domestic demand, which increased by 28 per cent. Transborder is the only market segment that experienced growth in both price and output over this period, by 35 per cent and 98 per cent, respectively. Since 1991, discount fares have largely contributed to the 12 per cent decline of the price of international services outside the US, and to significant demand increases.

Total airline revenues from freight activity have increased between 1991 and 1998 by 14 per cent, while air cargo rates declined by 5.6 per cent. The volume of air freight grew by 21 per cent over the same period. Overall, if air transport prices had grown at the rate of inflation during this period, airline users would have spent \$625 million more to travel than they did in 1998, a net saving of seven per cent. However, the inability of some air carriers to align price changes to the evolution of their cost structure was one of the major factors that rendered them unprofitable.

## COST STRUCTURE

The cost structure of the industry, in terms of the split between variable and capital cost, is relatively stable, at 82 per cent for variable and 18 per cent for capital. There were, however, some major shifts within the variable cost group during the eight-year period.

Labour costs represented about 24 per cent of total variable cost in 1998, close to that of 1997, but was 3.4 percentage points lower than in 1991. Fuel cost share was around 14 per cent of total in the aviation sector from 1991 to 1997, but dropped to 12 per cent in 1998. Other variable costs as a group (airport and navigation fees, marketing, materials and other expenses) represented a cost share of 46 per cent in 1998, significantly higher than 40 per cent in 1991.

Capital costs as a share of total cost have not changed in 1998. There has been a shift from owned to leased assets. The leasing component within capital costs went from one third in 1991 to more than one half in 1998.

## PRODUCTIVITY AND UNIT COST INDICATORS

Between 1991 and 1998, total factor productivity of the airline industry as a whole increased by 27 per cent, with most of the gains achieved in 1996 and 1997. Since 1991, the unit cost of the air industry has declined by nine per cent, half the cost decline observed in the railway industry over the same period. This cost performance was one of the factors that has, since 1991, allowed the major air carriers to keep factor cost increases below inflation and achieve cumulative annual cost savings. By 1998, these savings had reached \$1.3 billion, or 14 per cent of the cost base of the airline industry.

In 1998, the productivity of the airline industry dropped by 6.5 per cent, while unit cost increased by 5.1 per cent. This performance explains the decline in profitability of the industry during the year. For instance, after inflation, industry costs increased by \$348 million whereas revenues grew by \$55 million. The performance of individual carriers, however, varied significantly. Air Canada's productivity was adversely affected by its pilots' strike, while Canadian Airlines was subject to market competition preventing it from passing its cost increases on to users.

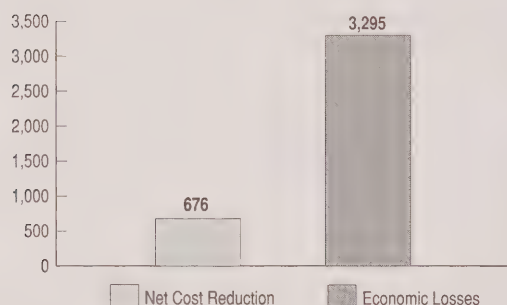
With the exception of fuel, all major cost groups (including labour, airport and navigation fees, aircraft rents and marketing expenses) contributed to a 13 per cent increase in total cost in 1998. The productivity decline meant higher unit costs, but industry costs also rose because of exchange rate variations. The devaluation of the Canadian dollar against the US dollar had a significant impact on some large Canadian carriers, as part of their expenses (such as aircraft rents, commissions and other purchased services) were incurred in US dollars. It is estimated that exchange rates had the effect of raising input prices by about two per cent.



## FINANCIAL PERFORMANCE

The net cost reduction, after price reductions, between 1991 and 1998 reached \$676 million. They were not, however, sufficient to offset the cumulative economic losses<sup>8</sup> of close to \$3.3 billion accumulated by the industry over the same period. Such losses, sustained over several years, resulted in the structural changes experienced by the industry in 1999. Figure 14-2 shows cumulative financial losses and cost reductions in the airline industry from 1992 to 1998.

**FIGURE 14-2: CUMULATIVE ECONOMIC LOSSES AND NET COST REDUCTION, AIRLINE INDUSTRY, 1992 – 1998**  
(Millions of dollars)



Source: Statistics Canada

Canadian Airlines accumulated financial losses in 1998 and 1999 of \$360 million. These consecutive losses have compromised the viability of the carrier. In December 1999, the majority of the shareholders of Canadian Airlines accepted Air Canada's purchase offer. The performance of Canadian Airlines' regional airlines, for the most part, was also not robust.

Air Canada's profitability was adversely affected in 1997 and 1998 by a labour dispute and several external factors. There was significant improvement in 1999. However, its operating income rose to \$503 million, from \$144 million in 1998, and its net income reached \$213 million, compared with a \$16 million loss in the previous year.

In 1998, the total combined revenues of Air Canada and Canadian Airlines, including their affiliates, amounted to just over \$9 billion, an increase of six per cent from 1997. Total cost, however, increased by nine per cent. As a result, their average operating ratio deteriorated to 98.7 per cent from 94.6 per cent. Table 14-10 summarizes the financial results for the airline industry.

**TABLE 14-10: SUMMARY OF FINANCIAL RESULTS FOR THE AIRLINE INDUSTRY**

	1991	1996	1997	1998	1999
<b>Air Canada and Canadian Airlines<sup>A</sup></b>					
Revenue (\$ million)	6,690	7,976	8,648	9,103	9,772
Expenses (\$ million)	6,678	7,856	8,182	8,981	9,411
Operating Income (\$ million)	11	121	465	122	361
Operating Ratio (per cent)	99.8	98.5	94.6	98.7	96.3
<b>Larger Independent Carriers<sup>B</sup></b>					
Operating Ratio (per cent)	98.8	97.1	94.0	97.6	N/A

Sources: A Consolidated results from Air Canada's and Canadian Airlines' annual reports  
B Transport Canada, based on Statistic Canada's files

Lower productivity performance and rising costs were major factors in the sharp decline of the air industry's profitability as a whole in 1998. Furthermore, relatively high debt costs added to net losses for some carriers.

In 1999, total combined operating revenues of Air Canada and Canadian Airlines climbed to \$9.8 billion, an increase of seven per cent from 1997. Total cost, however, increased by five per cent. As a result, their average operating ratio improved to 95.3 per cent. Fourth quarter results of Canadian Airlines are estimated.

In 1998, the independent carriers<sup>9</sup> as a group also showed a deterioration, with their average operating ratio climbing 3.6 percentage points to 97.6 per cent.

<sup>8</sup> The economic loss is the difference between the operating margin of the firms and the capital cost that ensures their financial viability.

<sup>9</sup> Air Transat, Canada 3000, Royal Air and WestJet.

TABLE 14-11: PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 1998

	Price changes (Annual per cent increase)				Output changes (Annual per cent increase)			
	1995/96	1996/97	1997/98	1991–1998	1995/96	1996/97	1997/98	1991–1998
<b>CN and CP</b>	(2.6)	(0.2)	(0.3)	(0.9)	3.0	10.4	(4.7)	1.9
<b>VIA Rail</b>								
Corridor	5.3	6.1	6.7	4.1	(4.7)	2.0	(4.6)	(0.9)
Long haul	11.3	7.3	8.6	6.9	(3.6)	(5.5)	(1.6)	0.7
Remote-regional	3.0	0.6	14.2	2.9	(2.4)	10.1	(5.9)	0.6
Total	6.9	6.1	7.2	4.8	(3.6)	1.2	(2.4)	(0.2)
<b>Trucking</b>								
Intraprovincial	(0.3)	1.1	(3.0)	(0.9)	10.7	1.4	8.8	7.3
Interprovincial	(5.5)	4.5	(1.3)	(0.2)	9.5	2.5	4.7	6.2
Transborder	(3.4)	3.3	0.2	0.7	11.4	16.3	6.9	14.1
Total trucking	(2.1)	2.3	(1.5)	(0.5)	10.4	6.7	6.6	9.3
<b>Intercity Bus Industry</b>								
Regular bus services	3.6	(0.3)	7.6	0.9	(4.7)	2.7	(6.7)	(3.8)
Charter bus services	0.8	(5.3)	(4.3)	(3.9)	2.1	(7.1)	29.5	10.3
Total bus	1.4	(0.1)	(5.1)	(0.9)	(0.9)	(2.9)	17.9	2.6
<b>Transit</b>								
Passengers	5.9	3.6	3.6	(0.6)	2.2	2.2	(0.4)	(0.8)
Vehicle-km	9.1	1.1	1.1	(3.5)	4.7	4.7	0.1	(0.6)
<b>Airline Industry</b>								
Domestic passenger	(6.7)	0.4	3.8	0.5	11.4	6.3	5.8	3.6
International passenger	(2.1)	6.2	1.9	0.3	14.1	10.4	5.3	8.5
Air freight	(6.8)	3.2	4.9	(0.8)	5.6	7.8	(3.5)	2.8
Total Air Industry	(4.3)	3.3	3.3	0.4	12.2	8.6	4.1	5.7
<b>Larger Transport Industries<sup>1</sup></b>								
Freight	(2.4)	1.5	(1.5)	(0.8)	7.7	8.0	3.7	6.6
Passenger	(4.4)	3.5	3.3	0.4	12.8	8.4	4.7	5.9
Total	(2.9)	2.0	0.1	(0.4)	9.2	8.1	3.6	6.3
<b>Total Transport<sup>2</sup></b>								
Commercial carriers	(3.0)	1.6	(0.0)	(0.4)	9.2	8.3	3.7	6.2
Public carriers	7.4	3.1	0.3	4.3	(2.5)	2.6	1.8	(1.1)
Total	(2.4)	1.7	(0.0)	(0.1)	8.4	7.9	3.6	5.7

1 CN and CP Rail, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files

TABLE 14-12: PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1991 AND 1998

	CN and CP	VIA Rail	Trucking	Intercity bus	Transit	Airlines	Larger industries <sup>1</sup>	Total <sup>2</sup>
Price Reduction (\$ Million)	1,091	(37)	1,799	113	(258)	625	3,514	3,332
Price Reduction (%)	16.9	(18.9)	12.5	17.0	(14.8)	7.1	11.8	10.3
Cost Saving (\$ Million)	2,118	172	2,201	168	(117)	1,502	5,822	6,045
Cost Saving (%)	32.7	35.8	15.6	26.4	(3.1)	16.8	19.7	17.6

1 CN and CP Rail, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files

TABLE 14-13: EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1991 TO 1998

		Productivity (Annual percentage increase)				Unit Costs (Annual percentage increase)			
		1995/96	1996/97	1997/98	1991-1998	1995/96	1996/97	1997/98	1991-1998
CN and CP Rail	Variable	7.4	8.0	6.6	4.7	(6.5)	(5.7)	(5.8)	(2.9)
	Capital	3.1	4.6	(3.8)	1.3	(10.6)	4.0	9.0	(2.4)
	Total	6.3	7.1	3.5	3.8	(7.6)	(3.2)	(1.8)	(2.7)
VIA Rail	Variable	2.8	2.2	(0.9)	3.5	1.8	(1.9)	1.7	(2.3)
	Capital	7.2	9.5	2.9	6.3	(6.8)	0.8	(2.5)	(4.7)
	Total	3.7	3.7	(0.2)	4.1	(0.1)	(1.4)	0.9	(2.8)
Trucking Industry	Variable	4.3	1.5	5.0	2.3	(1.6)	0.9	(2.3)	(0.6)
	Capital	0.1	0.9	(0.7)	1.0	4.2	(1.7)	(5.6)	(4.0)
	Total	3.8	1.4	4.3	2.1	(1.0)	0.6	(2.7)	(1.0)
Intercity Bus Industry	Variable	(0.9)	6.6	4.6	3.9	3.5	(0.6)	(6.8)	(1.9)
	Capital	(1.1)	(5.2)	(0.4)	3.9	(0.7)	(2.3)	(2.6)	(2.8)
	Total	(1.0)	4.4	3.7	3.9	2.7	(0.9)	(6.0)	(2.1)
Transit	Variable	(3.1)	3.6	(1.1)	0.4	3.9	(2.5)	(2.5)	1.4
	Capital	(9.4)	(2.1)	(46.6)	(12.3)	7.8	2.8	0.8	5.4
	Total	(4.6)	2.2	(15.1)	(2.8)	4.8	(1.3)	(1.7)	2.3
Airline Industry	Variable	6.4	2.5	(0.7)	3.1	(3.3)	(2.3)	4.9	(1.3)
	Capital	18.6	3.1	(6.8)	4.7	(15.0)	(3.7)	10.0	(1.8)
	Total	8.6	2.6	(1.8)	3.5	(5.6)	(2.6)	5.8	(1.4)
Larger Transport Industries <sup>1</sup>	Variable	5.6	3.1	3.6	3.1	(3.2)	(1.5)	(1.2)	(1.4)
	Capital	6.7	2.9	(3.7)	2.3	(7.7)	(0.2)	4.5	(2.7)
	Total	5.8	3.1	2.3	3.0	(4.0)	(1.3)	(0.2)	(1.6)
Total Transport <sup>2</sup>	Commercial Carriers	5.6	3.1	2.3	3.0	(3.9)	(1.3)	(0.4)	(1.6)
	Public Carriers	(3.6)	2.4	(13.5)	(2.0)	4.2	(1.3)	(1.4)	1.6
	Total	4.4	3.0	0.2	2.3	(2.8)	(1.3)	(0.5)	(1.2)

1 CN and CP Rail, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files

TABLE 14-14: COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991 AND 1996 - 1998

		(Per cent of total costs)							
		CN and CP	VIA Rail	Trucking	Intercity Bus	Transit	Airlines	Larger Industries <sup>1</sup>	Total <sup>2</sup>
1991	Variable	70.4	77.2	86.2	81.3	78.8	81.6	79.8	79.6
	Labour	40.1	38.5	48.1	39.8	51.6	27.5	40.7	40.7
	Fuel	8.4	3.2	11.7	8.0	4.0	13.6	10.1	10.1
	Other	22.0	35.5	26.4	33.5	23.2	40.4	29.0	28.9
	Capital	29.6	22.8	13.8	18.7	21.2	18.4	20.2	20.4
1996	Variable	73.8	78.4	88.8	81.7	76.2	80.7	82.5	81.7
	Labour	38.4	37.1	44.2	40.0	55.0	24.7	39.0	39.0
	Fuel	8.2	3.9	13.3	8.5	5.4	14.6	11.6	11.6
	Other	27.1	37.5	31.3	33.1	15.8	41.4	31.9	18.3
	Capital	26.2	21.6	11.2	18.3	23.8	19.3	17.5	18.3
1997	Variable	74.6	79.9	88.2	82.2	75.5	82.6	83.3	82.4
	Labour	34.7	36.7	44.9	39.5	54.3	24.1	38.5	38.5
	Fuel	9.2	4.1	13.1	9.4	5.4	14.4	11.6	11.6
	Other	30.8	39.1	30.2	33.3	15.9	44.1	33.2	17.6
	Capital	25.4	20.1	11.8	17.8	24.5	17.4	16.7	17.6
1998	Variable	72.7	79.4	88.5	82.0	74.5	82.8	83.1	82.0
	Labour	36.0	38.6	45.6	38.7	54.0	24.1	38.8	38.8
	Fuel	7.9	3.6	13.0	8.5	5.2	12.3	10.8	10.8
	Other	28.9	37.2	29.9	34.8	15.3	46.4	33.4	18.0
	Capital	27.3	20.6	11.5	18.0	25.5	17.2	16.9	18.0

1 CN and CP Rail, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and Carriers' files





ISBN-0-662-28547-6



Cat. No. T1-10/1999E  
ISBN 0-662-28547-6

Également disponible en français sous le titre « Les transports au Canada 1999 »

CA1  
T  
-T61

---

# TRANSPORTATION IN CANADA 2000

---

A N N U A L   R E P O R T



Transport  
Canada

Transports  
Canada

Canada



---

# TRANSPORTATION IN CANADA 2000

---

A N N U A L   R E P O R T



Transport  
Canada

Transports  
Canada

Canada



© Minister of Public Works and Government Services, Canada, 2000

Cat. No. T1-10/2000E

ISBN 0-662-29917-5

Également disponible en français sous le titre «Les transports au Canada 2000»

Minister of Transport



Ministre des Transports

Ottawa, Canada K1A 0N5

2/5/01

Her Excellency the Right Honourable Adrienne Clarkson, C.C., C.M.M., C.D.  
Governor General of Canada  
Rideau Hall  
1 Sussex Drive  
Ottawa, Ontario  
K1A 0A1

Excellency:

I am submitting to your attention the fifth Annual Report on the state of transportation in Canada. The report satisfies the statutory requirements defined in Section 52 of the *Canada Transportation Act*. The report clearly shows the very significant role played by transportation in the Canadian economy.

The 2000 Annual Report, as did the four preceding ones, contains a wealth of information on the state of the Canadian transportation system. The most recent information available is put forward in the Annual Report in a way that allows one to understand the sources of demand and pressures on the transportation system. It presents, among other things, an overview of the system's infrastructure, as well as current trends in Canada's transportation and trade, with special attention to energy use by the transportation sector.

The report precedes that of the *Canada Transportation Act* Review Panel. These two reports, as well as the first four Annual Reports, will be useful in defining a national transportation blueprint for the next decade and beyond.

A solid information base will help in understanding the trends and challenges that have faced transportation in recent years. Our country's GDP depends to a large extent on trade. Looking ahead, it is clear that Canada's prospects for growth and development are in the global marketplace. To support strong economic growth in the future, we must aim to make the country's transportation system the best in the world — safe, efficient, integrated, accessible and environmentally friendly.

Yours sincerely,

Hon. David M. Collenette, P.C., M.P.

Canada



# TABLE OF CONTENTS

	<i>Page</i>
<i>Report Highlights</i> .....	<i>i</i>
<b>1. Introduction</b> .....	<b>1</b>
<b>2. Transportation and the Canadian Economy</b> .....	<b>3</b>
The Canadian Economy .....	3
Contribution of Transportation to the Economy .....	6
<b>3. Government Spending on Transportation</b> .....	<b>9</b>
Government Transportation Expenditures .....	9
Total Transportation Revenues by Level of Government .....	13
Overview of Expenditures and Revenues by Mode .....	13
<b>4. Transportation and Safety</b> .....	<b>15</b>
Transportation Occurrences .....	15
Transportation of Dangerous Goods .....	26
<b>5. Transportation — Energy and Environment</b> .....	<b>27</b>
Energy .....	27
Transportation's Environmental Impact .....	32
<b>6. Transportation and Regional Economies</b> .....	<b>39</b>
A Socio-economic Profile of Provincial Economies .....	39
The Value-Added of Commercial Transportation .....	41
Domestic Transport Related Demand .....	42
<b>7. Transportation and Employment</b> .....	<b>45</b>
Workforce .....	45
Average Salaries .....	55
Labour Action in Transportation .....	58
<b>8. Transportation and Trade</b> .....	<b>59</b>
Domestic Trade .....	59
International Trade .....	62
<b>9. Transportation and Tourism</b> .....	<b>71</b>
Tourism Expenditures .....	71
Travel Overview .....	73
<b>10. Transportation Infrastructure</b> .....	<b>81</b>
Rail Transportation Infrastructure .....	81
Road Transportation Infrastructure .....	84
Marine Transportation Infrastructure .....	87
Air Transportation Infrastructure .....	103



# TABLE OF CONTENTS (Cont'd)

	<i>Page</i>
<b>11. Structure of the Transportation Industry</b> .....	<b>111</b>
Rail Industry .....	111
Trucking Industry .....	112
Bus Industry .....	122
Marine Transportation Industry .....	124
Air Transportation Industry .....	132
<b>12. Freight Transportation</b> .....	<b>139</b>
Rail Transportation .....	139
Trucking Transportation .....	142
Marine Transportation .....	145
Air Transportation .....	151
<b>13. Passenger Transportation</b> .....	<b>155</b>
Rail Transportation .....	155
Bus Transportation .....	156
Automobile Transportation .....	159
Marine Transportation .....	159
Air Transportation .....	160
<b>14. Price, Productivity and Financial Performance in the Transportation Sector</b> .....	<b>175</b>
Rail Industry .....	176
Trucking Industry .....	179
Bus Industry .....	181
Air Transport Industry .....	183

## LIST OF APPENDICES

	<i>Title</i>	<i>Page</i>
	<b>Transportation and the Canadian Economy</b>	
2-1:	PERSONAL EXPENDITURES ON TRANSPORTATION, 1998 .....	8
	<b>Transportation Infrastructure</b>	
10-1	AIRPORTS CAPITAL ASSISTANCE PROGRAM – PROJECTS APPROVED IN 2000 .....	110
	<b>Passenger Transportation</b>	
13-1	AMENDED FRAMEWORK FOR CANADA'S INTERNATIONAL AIR POLICY AS AT DECEMBER 21, 1999 .....	170
13-2	INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 2000 (EXCLUDING CANADA-US TRANSBORDER SERVICES) .....	171
13-3	SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000 .....	172

# LIST OF TABLES

	<i>Title</i>	<i>Page</i>
<b>2.</b>	<b>Transportation and the Canadian Economy</b>	
2-1:	GENERAL ECONOMIC INDICATORS .....	3
2-2:	PROVINCIAL ECONOMIC GROWTH .....	6
2-3:	COMMERCIAL TRANSPORTATION AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP) .....	6
2-4:	TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP) .....	7
<b>3.</b>	<b>Government Spending On Transportation</b>	
3-1:	GOVERNMENTS' GROSS AND NET EXPENDITURES ON TRANSPORTATION, 1996/97 TO 2000/01 .....	9
3-2:	FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES, 1996/97 TO 2000/01 .....	10
3-3:	DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE, 1996/97 TO 2000/01 .....	11
3-4:	GOVERNMENT REVENUES FROM TRANSPORT USERS, 1996/97 TO 2000/01 .....	13
3-5:	TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT .....	14
<b>4.</b>	<b>Transportation and Safety</b>	
4-1:	TRANSPORTATION OCCURRENCES BY MODE, 2000 VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999) .....	16
4-2:	ACCIDENT RATES IN TRANSPORTATION, 2000 VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999) .....	16
4-3:	ACCIDENTS IN RAIL TRANSPORTATION, 1995 – 2000 .....	17
4-4:	RAILWAY CROSSING ACCIDENTS BY PROVINCE, 1995 – 2000 .....	17
4-5:	RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 2000 .....	17
4-6:	TOTAL ROAD CASUALTY COLLISIONS, FATALITIES AND INJURIES, 1994 – 1999 .....	18
4-7:	ROAD FATALITIES BY CATEGORY OF ROAD USER, 1994 – 1999 .....	18
4-8:	COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998 .....	19
4-9:	VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998 .....	19
4-10:	MARINE OCCURRENCES, 1995 – 2000 .....	22
4-11:	ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1995 – 2000 .....	24
4-12:	ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000 .....	25
4-13:	FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000 .....	25
4-14:	FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1995 – 1999 .....	25
4-15:	REPORTABLE DANGEROUS GOODS ACCIDENTS BY MODE AND PHASE OF TRANSPORT, 1995 – 2000 .....	26
4-16:	DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1995 – 2000 .....	26
4-17:	TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1995 – 2000 .....	26
<b>6.</b>	<b>Transportation and Regional Economies</b>	
6-1:	A SOCIO-ECONOMIC PROFILE OF CANADA'S PROVINCES, 1999 .....	40
6-2:	RELATIVE IMPORTANCE OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999 .....	42
6-3:	ANNUAL GROWTH OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999 .....	42
6-4:	DOMESTIC TRANSPORT-RELATED DEMAND AS A PERCENTAGE OF PROVINCIAL FINAL DOMESTIC DEMAND, 1999 .....	43
6-5:	ANNUAL GROWTH IN DOMESTIC TRANSPORT DEMAND, 1999 .....	43
<b>7.</b>	<b>Transportation and Employment</b>	
7-1:	TRANSPORTATION EMPLOYMENT BY CATEGORY, 1996 – 2000 .....	46
7-2:	EMPLOYMENT BY RAIL TRANSPORT SERVICES, 1995 – 1999 .....	46
7-3:	EMPLOYMENT BY MEDIUM AND LARGE FOR-HIRE TRUCKING FIRMS, 1995 – 1999 .....	47
7-4:	EMPLOYMENT IN THE TRUCKING INDUSTRY, BY REGION .....	47
7-5:	TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY, 1995 – 1999 .....	48
7-6:	FULL-TIME EMPLOYEES IN THE BUS INDUSTRY, 1995 – 1999 .....	48
7-7:	AVERAGE ANNUAL EMPLOYMENT IN THE MARINE TRANSPORT INDUSTRY, 1996 – 2000 .....	49
7-8:	REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1995 – 1999 .....	49
7-9:	EMPLOYMENT IN THE AIR INDUSTRY, 1995 – 1999 .....	50
7-10:	OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT, 1996 – 2000 .....	50
7-11:	EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES, 1995 – 1999 .....	51
7-12:	EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 – 2000 .....	51
7-13:	EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1996 – 2000 .....	52
7-14:	EMPLOYMENT AT NAS AIRPORTS, 2000 .....	52

	<i>Title</i>	<i>Page</i>
7-15:	PLANNED FULL-TIME EQUIVALENTS FEDERAL DEPARTMENTS AND AGENCIES .....	52
7-16:	MARINE EMPLOYMENT, ASSOCIATED SERVICES, 1996 – 2000 .....	53
7-17:	EMPLOYMENT BY TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS, 1996 – 2000 .....	54
7-18:	AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR BY MODE AND PROVINCE, 1996 – 2000 .....	55
7-19:	AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY, 1996 – 1999 .....	56
7-20:	AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1996 – 2000 .....	56
7-21:	AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY, 1995 – 1999 .....	57
7-22:	ANNUAL LABOUR COSTS PER EMPLOYEE CANADIAN BASED MARINE CARRIERS, 1995 – 1999 .....	57
7-23:	ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS, 1995 – 1999 .....	57
7-24:	LABOUR ACTION BY MODE OF TRANSPORT, 1996 – 2000 .....	58
<b>8.</b>	<b>Transportation and Trade</b>	
8-1:	DOMESTIC TRADE BY SECTOR, 1999 .....	60
8-2:	DOMESTIC TRANSPORTATION FLOWS, 1999 .....	60
8-3:	DOMESTIC TRANSPORTATION FLOWS, BY SECTOR AND MODE, 1999 .....	61
8-4:	INTERPROVINCIAL TRADE, MAIN EAST–WEST ROUTES, 1999 .....	62
8-5:	CANADA–US TRADE BY MODE AND SECTOR, 1993 – 1999 .....	64
8-6:	CANADA–US TRADE BY PROVINCE, 1999 .....	64
8-7:	CANADA–US TRADE BY US REGION, 1989 AND 1999 .....	65
8-8:	CANADA–US TRANSBORDER TRADE SHOWING MAIN NORTH–SOUTH TRADE FLOWS, 1999 .....	66
8-9:	EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED CURRENCY .....	67
8-10:	CANADA–NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1993 – 1999 .....	68
8-11:	CANADA’S TRADE WITH NON-US COUNTRIES BY PROVINCE, 1999 .....	68
8-12:	CANADA’S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999 .....	69
8-13:	CANADA’S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999 .....	69
8-14:	CANADIAN EXPORTS BY COUNTRY GROUPINGS, 1999 AND 2000 .....	70
8-15:	CANADIAN IMPORTS BY COUNTRY GROUPINGS, 1999 AND 2000 .....	70
<b>9.</b>	<b>Transportation and Tourism</b>	
9-1:	TOURIST SPENDING IN CANADA ON TRANSPORTATION AND OTHER MAJOR CATEGORIES, 1999 .....	72
9-2:	CANADIAN TRAVEL SUMMARY, 1999 – 2000 .....	73
9-3:	DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1999 .....	74
9-4:	CANADA–US TRAVEL BY MODE, 2000 .....	76
9-5:	CANADA–US AIR BUSINESS TRAVEL, BY PROVINCE, 1999 .....	77
9-6:	CANADA–US AUTOMOBILE BUSINESS TRAVEL, BY PROVINCE: 1999 .....	78
9-7:	PURPOSE OF TRIP FOR OVERSEAS TRAVEL, 1990 AND 1999 .....	79
<b>10.</b>	<b>Transportation Infrastructure</b>	
10-1:	RAILWAYS IN CANADA, 2000 .....	81
10-2:	CN AND CPR RATIONALIZATION BY PROVINCE, 1990 – 2000 .....	82
10-3:	CN AND CPR RATIONALIZATION BY PROVINCE, 2000 .....	83
10-4:	PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE .....	83
10-5:	LENGTH OF ROADS IN CANADA .....	85
10-6:	TRAFFIC LEVELS ON THE PRIMARY PROVINCIAL HIGHWAY NETWORK, 1996 .....	85
10-7:	TWENTY LARGEST BORDER CROSSINGS FOR TRUCKS, 1998-2000 .....	88
10-8:	CLASSIFICATION OF MAJOR PORTS .....	89
10-9:	PORTS NO LONGER UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA, 1996 – 2000 .....	89
10-10:	NUMBER OF SITES UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA BY PROVINCE AND YEAR, 1995 – 2000 .....	90
10-11:	DIVESTITURE STATUS OF TRANSPORT CANADA REGIONAL/LOCAL AND REMOTE PORTS .....	91
10-12:	CANADA PORT AUTHORITIES FINANCIAL PROFILES, 1999 .....	91
10-13:	FINANCIAL RESULTS OF MAJOR PORTS, 1995 – 1999 .....	92
10-14:	CANADA PORT AUTHORITIES FINANCIAL COMPARISON, 1998 AND 1999 .....	92
10-15:	FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1995/96 – 1999/00 .....	93
10-16:	TOTAL TONNAGE HANDLED IN CANADA’S PORT SYSTEM, 1998 – 1999 .....	94
10-17:	FISHING HARBOURS BY MANAGEMENT TYPE AND REGION, JANUARY 2001 .....	95

<i>Title</i>	<i>Page</i>
10-18: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96 – 2000/2001 .....	95
10-19: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, AS OF JANUARY 2001 .....	95
10-20: SMALL CRAFT HARBOURS RECREATIONAL HARBOURS BY MANAGEMENT TYPE, AS OF JANUARY 2001 .....	95
10-21: ST. LAWRENCE SEAWAY CARGO MOVEMENTS, 1990 – 2000 .....	97
10-22: ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 1993 – 2000 .....	98
10-23: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1999/2000 .....	98
10-24: PILOTAGE AUTHORITY FINANCIAL RESULTS, 2000 .....	99
10-25: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1996 – 2000 .....	99
10-26: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1996 – 2000 .....	100
10-27: CANADIAN COAST GUARD, VESSEL, AIRCRAFT AND FACILITY ASSETS, 2000 .....	102
10-28: CANADIAN COAST GUARD REVENUES AND EXPENDITURES, 1997/98 – 2000/01 .....	102
10-29: CANADIAN COAST GUARD REVENUES AND BUDGETED EXPENDITURES, 2000/01 .....	103
10-30: SUMMARY OF KEY CANADIAN AIR TRAFFIC CONTROL OPERATION STATISTICS, 1996 – 2000 .....	103
10-31: FINANCIAL SUMMARY FOR NAV CANADA, 1999 – 2000 .....	104
10-32: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 2000 .....	105
10-33: AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS .....	107
10-34: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1999 .....	108
10-35: AIRPORT CAPITAL ASSISTANCE PROGRAM EXPENDITURES BY PROVINCE, 1995/96 – 1999/2000 .....	109

## **11. Structure of the Transportation Industry**

11-1: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1997 – 1999 .....	117
11-2: TOP 50 FOR-HIRE CARRIERS BASED ON NUMBER OF VEHICLES, 2000 .....	118
11-3: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1999 .....	119
11-4: CANADIAN COURIER COMPANIES, ESTIMATED VOLUME AND REVENUES, 1998 .....	120
11-5: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIER, 1997 .....	120
11-6: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1987 – 2000 .....	122
11-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1999 .....	122
11-8: TOTAL REVENUES BY INDUSTRY SECTOR, 1995 – 1999 .....	123
11-9: CANADIAN REGISTERED FLEET BY TYPE, 1980 – 2000 .....	126
11-10: EAST COAST CANADIAN-FLAG CARGO FLEET — 1,000 GRT AND OVER, 2000 .....	127
11-11: SHIPPING CONFERENCES SERVING CANADA IN 2000 .....	129
11-12: GLOBAL AIRLINE ALLIANCES, 2000 .....	134
11-13: CAPACITY SHARES OF AIRLINES, DECEMBER 1999 .....	134
11-14: CAPACITY SHARES OF AIRLINES, DECEMBER 2000 .....	134
11-15: AIRCRAFT OF SELECTED CANADIAN CARRIERS IN PASSENGER SERVICE .....	135
11-16: CANADIAN AIR CARGO AIRLINES .....	135
11-17: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 2000 .....	135
11-18: AIR CANADA'S DOMESTIC CODE-SHARE PARTNERS AS OF DECEMBER 31, 2000 .....	136
11-19: LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF DECEMBER 31, 2000 .....	136
11-20: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000 .....	137
11-21: SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 2000 .....	137
11-22: PERSONNEL LICENCES AND PERMITS BY PROVINCE AS OF DECEMBER 2000 .....	137

## **12. Freight Transportation**

12-1: GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY, 1998 AND 1999 .....	140
12-2: TRANSBORDER RAIL TRAFFIC BY PROVINCE, 1999 .....	140
12-3: FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1999 .....	142
12-4: INTERNATIONAL FOR-HIRE TRUCK TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1999 .....	143
12-5: FOR-HIRE TRUCKING TRAFFIC BY COMMODITY GROUP, 1999 .....	143
12-6: FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1999 .....	143
12-7: REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCE/TERRITORY, 2000 .....	144
12-8: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1998 TO 2000 .....	144
12-9: REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCE/TERRITORY, 2000 .....	145
12-10: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 – 1999 .....	146
12-11: CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1999 .....	146



<i>Title</i>	<i>Page</i>
12-12: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1999 .....	146
12-13: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 – 1999 .....	147
12-14: VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1999 .....	148
12-15: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 – 1999 .....	148
12-16: LINER TRAFFIC BY REGION, 1999 .....	148
12-17: CANADA'S MARITIME TRADE WITH THE US, 1986 – 1999 .....	149
12-18: CANADA'S MARINE TRAFFIC TO THE US, 1999 .....	149
12-19: CANADA'S MARINE TRAFFIC FROM THE US, 1999 .....	149
12-20: CANADA'S MARITIME OVERSEAS TRADE, 1986 – 1999 .....	150
12-21: CANADA'S MARINE TRAFFIC TO OVERSEAS, 1999 .....	150
12-22: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1999 .....	151
12-23: GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999 .....	151
12-24: OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999 .....	152
12-25: VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 – 1999 .....	152
12-26: TOTAL EXPORTS BY AIR TO COUNTRIES OTHER THAN THE US BY MAIN COUNTRIES OF DESTINATION, 1999 .....	153
12-27: TOTAL IMPORTS BY AIR FROM COUNTRIES OTHER THAN THE US BY MAIN COUNTRIES OF ORIGIN, 1999 .....	153
 <b>13. Passenger Transportation</b>	
13-1: PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 – 1999 .....	155
13-2: COMMUTER RAIL PASSENGERS IN TORONTO, MONTREAL AND VANCOUVER, 1994 – 1999 .....	155
13-3: CANADIAN SCHEDULED CARRIERS AND MARKETS SERVED, 2000 .....	156
13-4: SUMMARY OF REVENUES FOR SCHEDULED INTERCITY OPERATORS, 1999 .....	156
13-5: URBAN TRANSIT FLEET COMPOSITION, 1991 – 1998 .....	158
13-6: CAR AND LIGHT TRUCK STATISTICS, BY PROVINCE/TERRITORY, 1999 AND 2000 .....	159
13-7: INTERNATIONAL CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 – 2000 .....	160
13-8: COUNTRIES/TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 2000 .....	162
13-9: AIR CANADA DOMESTIC AIR SERVICE COMMITMENTS .....	163
13-10: NEW DIRECT NON-STOP DOMESTIC SCHEDULED AIR SERVICES IN 2000 .....	163
13-11: COMPETITION IN DOMESTIC AIR MARKETS AS OF AUGUST, 2000 .....	164
13-12: NATIONAL AIRPORTS SYSTEM (NAS) NUMBER OF DOMESTIC MARKETS SERVED INCLUDING CHARTERS AS OF DECEMBER 2000 .....	164
13-13: DOMESTIC PASSENGER TRAFFIC, 1988 – 1999 .....	165
13-14: NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 2000 .....	166
13-15: CANADA-US AIR PASSENGERS: SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1999 .....	166
13-16: NUMBER OF US AIRPORTS SERVED BY NAS AIRPORTS (SCHEDULED NON-STOP ONLY) AS OF DECEMBER 31, 2000 .....	166
13-17: CANADA – INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 – 1999 ..	167
13-18: NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORTS SYSTEM (SCHEDULED DIRECT ONLY) AS OF DECEMBER 31, 2000 .....	168
 <b>14. Price, Productivity and Financial Performance in the Transportation Sector</b>	
14-1: PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY .....	175
14-2: SIMULATION OF THE EFFECT OF 2000 FUEL PRICE INCREASES .....	176
14-3: THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS .....	178
14-4: VIA RAIL'S FINANCIAL PERFORMANCE RESULTS, 1996 – 1999 .....	179
14-5: THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS .....	180
14-6: SUMMARY OF FINANCIAL INDICATORS FOR ALL INTERCITY BUS INDUSTRIES .....	181
14-7: SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS, 1994 – 1999 .....	183
14-8: FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES, 1999 .....	183
14-9: SUMMARY OF FINANCIAL RESULTS FOR THE AIR TRANSPORT INDUSTRY, 1994 – 2000 .....	185
14-10: PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 1999 .....	186
14-11: PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1994 AND 1998 .....	186
14-12: COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991, 1994 AND 1998 – 1999 .....	187
14-13: EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1994 TO 1999 .....	187
14-14: SIMULATED 2000 FUEL PRICE ON TOTAL COSTS, TRANSPORT PRICES AND SUBSIDIES .....	188

# LIST OF FIGURES

	<i>Title</i>	<i>Page</i>
<b>2.</b>	<b>Transportation and the Canadian Economy</b>	
2-1:	GOODS INDUSTRY CAPACITY UTILIZATION, 1986 – 2000 .....	3
2-2:	REAL GDP BY MAJOR SECTOR, 1996 – 2000 .....	4
2-3:	REAL GDP IN CANADA AND OTHER REGIONS, 1997 – 2000 .....	4
2-4:	MERCHANDISE TRADE, 1995 – 2000 .....	4
2-5:	REAL PERSONAL DISPOSABLE INCOME PER CAPITA, 1996 – 2000 .....	5
2-6:	INTERNATIONAL OVERNIGHT TRAVEL, 1990 – 2000 .....	5
<b>3.</b>	<b>Government Spending On Transportation</b>	
3-1:	PROVINCIAL/TERRITORIAL AND LOCAL TRANSPORT EXPENDITURES BY PROVINCE, 1995/96 TO 1999/2000 .....	12
<b>4.</b>	<b>Transportation and Safety</b>	
4-1:	REPORTABLE ACCIDENTS INVOLVING DANGEROUS GOODS, 1995 – 2000 .....	16
4-2:	CROSSING AND TRESPASSER ACCIDENTS, 1995 – 2000 .....	18
4-3:	THREE-YEAR AVERAGE NUMBER OF FATALITIES BY PROVINCE, 1997 – 1999 .....	19
4-4:	PERCENTAGE OF ROAD COLLISIONS AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1998 .....	19
4-5:	RESULTS OF THE NATIONAL SEAT BELT SURVEY CONDUCTED IN JUNE OF EACH YEAR, 1988 – 2000 .....	20
4-6:	AVERAGE MOTOR VEHICLE FATALITY RATES AMONG SELECTED OECD COUNTRIES, 1997 – 1999 .....	20
4-7:	SHIPPING ACCIDENTS, BY TYPE, 2000 .....	21
4-8:	VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL FLAG AND VESSEL TYPE, 1995 – 2000 .....	21
4-9:	SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 1999 VERSUS 2000 .....	22
4-10:	CANADIAN VERSUS FOREIGN FLAG COMMERCIAL VESSEL ACCIDENT RATE, 1995 – 2000 .....	23
4-11:	REPORTABLE INCIDENTS OF ALL AIRCRAFT, 2000 .....	25
<b>5.</b>	<b>Transportation — Energy and Environment</b>	
5-1:	ENERGY USE IN THE CANADIAN ECONOMY, 1999 .....	27
5-2:	GROWTH IN ENERGY USE BY SECTOR, 1990 – 1999 .....	28
5-3:	ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1999 .....	28
5-4:	GROWTH IN ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1990 – 1999 .....	28
5-5:	ENERGY USE IN THE TRANSPORTATION SECTOR BY SOURCE, 1999 .....	28
5-6:	TRANSPORTATION ENERGY PURCHASES BY REGION IN PETAJOULES, 1999 .....	29
5-7:	RETAIL PRICES OF ROAD FUELS VERSUS CRUDE OIL .....	29
5-8:	ANNUAL PRICE OF ROAD GASOLINE AND DIESEL, 1991 – 2000 .....	30
5-9:	PRICE OF RAIL DIESEL AND JET FUEL, 1991 – 1999 .....	30
5-10:	RETAIL PRICE OF MOTOR GASOLINE BY CITY .....	31
5-11:	ANNUAL PRICE OF MOTOR GASOLINE (REGULAR UNLEADED), NOMINAL VERSUS REAL PRICE .....	31
5-12:	INTERNATIONAL PRICE OF MOTOR GASOLINE FOR 2000 .....	31
5-13:	TRANSPORTATION GREENHOUSE GASES, 1998 .....	32
<b>7.</b>	<b>Transportation and Employment</b>	
7-1:	DISTRIBUTION OF RAIL EMPLOYMENT BY CATEGORY, 1999 .....	47
7-2:	REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1999 .....	50
7-3:	MARINE PILOTAGE EMPLOYMENT DISTRIBUTION, 2000 .....	54
7-4:	TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS EMPLOYMENT DISTRIBUTION, 2000 .....	54
7-5:	EMPLOYMENT BY NAV CANADA, 2000 .....	54
7-6:	AVERAGE WEEKLY EARNINGS, BY MODE, 2000 .....	55
7-7:	NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1996 – 2000 .....	58
<b>8.</b>	<b>Transportation and Trade</b>	
8-1:	DOMESTIC TRADE BY TYPE, 1993 – 1999 .....	59
8-2:	DOMESTIC TRADE BY SECTOR, 1993 – 1999 .....	60
8-3:	INTRAPROVINCIAL TRADE BY PROVINCE, 1993 AND 1999 .....	61
8-4:	INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1999 .....	62
8-5:	INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, OTHER REGIONS AS ORIGIN, 1999 .....	62
8-6:	TRENDS — INTERPROVINCIAL TRADE VERSUS EXPORTS AND IMPORTS, 1993 – 1999 .....	63

<i>Title</i>	<i>Page</i>
8-7: INTERNATIONAL TRADE BY TYPE, 1993 – 1999 .....	63
8-8: US IMPORTANCE IN CANADA'S EXPORTS, 1981 – 1999 .....	63
8-9: CANADA-US TRADE, MAIN ONTARIO TRADE FLOWS, 1999 .....	66
8-10: CANADA-US TRADE, MAIN CANADIAN REGIONS TRADE FLOWS, 1999 .....	66
8-11: EXPORTS TO NON-US COUNTRIES, 1993 – 1999 .....	67
8-12: IMPORTS FROM NON-US COUNTRIES, 1993 – 1999 .....	67
8-13: EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1999 .....	69
8-14: IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1999 .....	69
<b>9. Transportation and Tourism</b>	
9-1: TOURISM SPENDING IN CANADA, 1986 – 2000 .....	71
9-2: EXPENDITURES BY OVERNIGHT NON-RESIDENT VISITORS BY PROVINCE, 1999 .....	72
9-3: CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 – 2000 .....	73
9-4: DOMESTIC TRAVEL BY PROVINCE, 1999 .....	74
9-5: INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 2000 .....	75
9-6: SAME-DAY CANADA-US AUTOMOBILE EXCURSIONS, 1996 – 2000 .....	75
9-7: OVERNIGHT CANADA-US EXCURSIONS, 1996 – 2000 .....	75
9-8: DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1998 – 1999 .....	75
9-9: CANADA-US AIR BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999 .....	77
9-10: CANADA-US AUTOMOBILE BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999 .....	77
9-11: VISITORS TO CANADA FROM ASIA, 1990 – 2000 .....	78
9-12: VISITORS TO CANADA FROM MAJOR EUROPEAN COUNTRIES, 1990 – 2000 .....	78
9-13: VISITORS TO CANADA FROM COUNTRIES OTHER THAN THE UNITED STATES, 1998 – 2000 .....	78
9-14: CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1997 – 1999 .....	79
<b>10. Transportation Infrastructure</b>	
10-1: CANADIAN RAIL NETWORK RESTRUCTURING, 1990 – 2000 .....	81
10-2: CHANGES IN CANADA'S RAIL NETWORK, 2000 .....	82
10-3: ANNUAL TWO-WAY VEHICLE COUNTS BETWEEN CANADA AND THE UNITED STATES, 1986-2000 .....	87
10-4: CANADA PORT AUTHORITY PORTS .....	90
10-5: TRAFFIC SHARES BY PORT GROUPS, 1999 .....	94
10-6: GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM .....	96
10-7: PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 2000 .....	100
10-8: AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1996 – 1999 .....	103
10-9: NAV CANADA FEE SHARES, 2000 .....	104
10-10: MAP OF AIRPORTS DIVESTITURE, 2000 — NATIONAL AIRPORTS SYSTEM .....	105
10-11: MAP OF AIRPORTS DIVESTITURE, 2000 — REGIONAL/LOCAL AIRPORTS .....	106
10-12: MAP OF AIRPORTS DIVESTITURE, 2000 — SMALL AND ARCTIC AIRPORTS .....	106
<b>11. Structure of the Transportation Industry</b>	
11-1: SHORTLINE INDUSTRY GROWTH, 1990 – 2000 .....	111
11-2: TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1999 .....	112
11-3: NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF \$1 MILLION OR MORE, 1990 – 1999 .....	119
11-4: NUMBER OF BANKRUPTCIES, TRUCKING VERSUS TOTAL ECONOMY, 1989 – 2000 .....	122
11-5: CANADIAN REGISTERED FLEET, 1980 – 1999 .....	125
11-6: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000 .....	136
<b>12. Freight Transportation</b>	
12-1: TOTAL MONTHLY LOADINGS BY RAIL, 1998 – 2000 .....	141
12-2: MONTHLY GRAIN LOADINGS BY RAIL, 1998 – 2000 .....	141
12-3: TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1989 – 1999 .....	142
12-4: ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 2000 .....	145
12-5: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 – 1999 .....	147

**13. Passenger Transportation**

13-1:	INTERCITY SCHEDULED BUS PASSENGERS, 1980 – 1999 .....	156
13-2:	SCHEDULED INTERCITY AND CHARTER SERVICES REVENUE TRENDS, 1990 – 1999 .....	157
13-3:	CHARTER BUS FLEET SIZE, 1981 – 1999 .....	157
13-4:	CHARTER BUS FLEET UTILIZATION, 1981 – 1999 .....	157
13-5:	CHARTER CARRIER'S BUS-KILOMETRES, 1981 – 1999 .....	157
13-6:	URBAN TRANSIT FLEET SIZE, 1981 – 1999 .....	158
13-7:	LONG-TERM TRENDS IN URBAN TRANSIT, 1981 – 1999 .....	158
13-8:	DOMESTIC MARKET SHARE AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS, DECEMBER 2000 .....	165
13-9:	DOMESTIC PASSENGER TRAFFIC BY REGION, 1999 .....	166
13-10:	AIR PASSENGERS BY SECTOR, 1987 – 2000 .....	168
13-11:	ENPLANED/DEPLANED PASSENGERS AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS BY SECTOR, 2000 .....	168

**14. Price, Productivity and Financial Performance in the Transportation Sector**

14-1:	RAIL FREIGHT PRICE INDICES BY SECTOR, 1994 – 1999 .....	177
14-2:	PRODUCTIVITY TRENDS IN THE AIR TRANSPORT INDUSTRY, 1994 – 1999 .....	184





# REPORT HIGHLIGHTS

## TRANSPORTATION AND THE CANADIAN ECONOMY

- The year 2000 was the ninth consecutive year of uninterrupted growth for the Canadian economy. This sustained growth brought the non-farm goods sector close to production capacity. In some instances, the supply of skilled workers became a constraint. By year end, the first signs of an easing in economic growth began to appear, a reflection of a slowdown of the US economy.
- One of the key sources of increased demand in the Canadian economy in 2000 came from business investment spending.
- Both the manufacturing and primary goods sectors, especially mineral fuel production, experienced a significant increase in the level of activity in 2000. While construction activity, mostly residential construction, grew significantly, retail trade also had a good year. Consequently, transportation activity had its fourth consecutive year of solid growth.
- Growth in merchandise exports surpassed that of imports. The rise in total merchandise exports, as well as the significant increase in imports, came from energy products, and machinery and equipment. In the case of energy products, given that the value of activity is the unit of measurement, the increases in exports and imports of energy products reflected the increase in the price of crude petroleum in 2000, as well as the strength of the US and Canadian economies.
- Real per capita disposable income rose as a result of the strong Canadian economy and tax reductions.
- In 2000, the strong economic growth was spread across all regions of Canada.

- The transportation industries' share of gross domestic product (GDP) was 4.1 per cent in 2000, with trucking having the largest share at 1.7 per cent, and domestic marine transport services the lowest at 0.3 per cent.
- Transportation demand, however, accounted for 13.3 per cent of GDP, the bulk of which came from expenditures on transportation equipment.

## GOVERNMENT SPENDING ON TRANSPORTATION

- In gross terms, total government transportation expenditures in 1999/2000 increased from the previous fiscal year. Federal expenditures on transportation, however, decreased, while provincial/territorial and local governments' expenditures increased. In fact, since 1996/97, non-federal government transportation expenditures have been increasing by an average of 5.5 per cent annually.
- Annual gross government expenditures on transportation have ranged from \$17 to \$18 billion over the past five fiscal years.
- In net terms, government expenditures on transportation in 1999/2000 were approximately \$4.7 billion, but in the mid-1990s they were around \$7 billion.
- Between 1996/97 and 1999/2000, annual federal transport expenses fell from \$2.2 billion to 1.4 billion. The largest federal government transport expenses are related to the Canadian Coast Guard.
- In 2000/01, total federal subsidies, grants and contributions to transportation are expected to be slightly under \$600 million, half of what they were in the mid-1990s.

- Spending on roads and highways remains the most important category of transport-related expenditures by all provinces. Total government spending on roads reached \$12.5 billion in 1999/2000, or 69 per cent of overall government spending on transportation.
- In some provinces and territories, spending on other modes of transportation was also significant. The Northwest Territories' expenditures on air transport are a case in point. In 1999/2000, the share of total gross government transportation expenditures devoted to air, marine and rail were 2.3, 11 and 1.3 per cent, respectively.
- Spending on transit systems accounted for 12 per cent of all government expenditures on transportation in 1999/2000. The bulk of spending on urban transit transport services has shifted from provincial to local governments. In 1999/2000, Ontario accounted for 47 per cent of governmental transit expenditures. Quebec, Alberta and British Columbia also had significant transit expenditures.
- In 1999/2000, federal revenues from transportation totalled \$5.2 billion, of which \$4.8 billion came from fuel tax revenues. Provinces and territories generated revenues of \$9.2 billion during the same fiscal year, with \$7 billion coming from fuel tax levies.

## **TRANSPORTATION AND SAFETY**

- While there was a decline in the number of accidents in the aviation, marine and rail transport modes in 2000, the number of road casualty collisions was up slightly from the record low the previous year. Accidents involving dangerous goods also increased. The number of reported fatalities in air and rail transportation was down, while marine and road transportation showed a increase.
- The number of rail accidents reported in 2000 (1,062) was down from 1999. Non-main-track accidents accounted for 47 per cent of rail-related accidents, followed by crossing accidents, with a 25 per cent share, main-track train derailments and collisions with 12 per cent, and trespasser accidents with seven per cent. Dangerous goods were involved in 23 per cent of total rail accidents reported. In 2000, there were 87 rail fatalities, a figure 21 per cent less than the five-year average.
- In 1999, the most recent year for which information is available, there were 2,969 fatalities from motor vehicle accidents, a figure higher than the one reported in 1998, but below the five-year average. Roughly 18.7 per cent of all road fatalities involved collisions with commercial vehicles.

- The downward trend in the number of shipping accidents since 1990 continued in 2000, with fewer Canadian and foreign-flag vessels involved in accidents. The 21 fatal marine accidents in 2000 also represented a slight decline from the five-year average.
- A total of 321 accidents involving Canadian-registered aircraft occurred in 2000, the lowest number in the past 25 years. A slight decrease in the number of air fatalities, compared with 1999, was also reported.
- Two deaths and 42 injuries were caused by dangerous goods in 2000, with most of the accidents behind these statistics occurring at the handling stage rather than during transportation.

## **TRANSPORTATION — ENERGY AND ENVIRONMENT**

### **ENERGY**

- Transportation remains the single largest energy user in Canada, with 35 per cent of total domestic energy use in 1999. Between 1990 and 1999, transportation energy consumption increased by 26 per cent, a figure in line with the 24 per cent rise in real GDP over that period.
- Within the transportation sector, road transportation accounted for 72 per cent of total transportation energy consumption, followed by pipelines with 11 per cent, aviation with nine per cent, marine with five per cent, and rail with three per cent.
- Most of the transportation energy purchases in 1999 came from Ontario (34 per cent), Quebec (19 per cent), British Columbia (15 per cent) and Alberta (14.6 per cent).
- The price of crude oil in Canada more than tripled between February 1999 and November 2000. The retail price of motor gasoline, however, increased by only 51 per cent over the same period, while the price of diesel increased by 40 per cent.

### **ENVIRONMENT**

- On the environment front, Canada's greenhouse gas (GHG) emissions from transportation energy consumption were equivalent to 157 megatonnes of CO<sub>2</sub>, almost 35 per cent of total greenhouse gas emissions from total secondary energy use. Road transportation accounted for more than 77 per cent of transportation GHG emissions.

- With the increases in transportation energy demand in Canada, there are three major environmental issues to address: climate change, air quality and sustainability in the transportation sector.
- In 2000, Canada's Ministers of Energy and Environment released the first national business plan for the period 2001–2003, which outlines actions that they will take in all sectors of the economy to respond to climate change. The five transportation-related components of the federal contribution to this action plan have to do with fuel efficiency, new fuels, fuel-cell vehicles, freight transportation and urban transportation.
- At the end of 2000, Canada and the United States brought into force their agreement to reduce smog-causing pollutants.
- The Committee on Aviation Environmental Protection of the International Civil Aviation Organization developed a series of recommendations to reduce the environmental impact of aircraft noise and engine exhaust emissions.

## TRANSPORTATION AND REGIONAL ECONOMIES

- Not surprisingly, in Newfoundland and Prince Edward Island marine transportation has the largest share of provincial gross domestic product (PGDP) of all provinces. Newfoundland also has the highest share of the air mode of all provinces.
- Truck transport is the most important mode in Nova Scotia and New Brunswick, with New Brunswick having the largest trucking PGDP share of all provinces.
- Trucking and public transit are the most important modes in Ontario's and Quebec's PGDP.
- Rail transport has a higher importance in western provinces' PGDP, due largely to the relative importance of primary industries in the region. Saskatchewan has the highest rail PGDP share of all provinces. Trucking has the highest PGDP share in Manitoba, Alberta and British Columbia, followed by rail in Manitoba and Alberta, and marine in British Columbia.
- In the territories, air is the most important mode, with a higher share of PGDP than in any of the provinces.
- Commercial transport growth exceeded PGDP growth in Ontario, New Brunswick and all western provinces.
- In 1999, New Brunswick had the highest level of domestic demand for transportation, followed by Ontario and Quebec.

- The annual growth in domestic transportation demand in 1999 exceeded the growth in provincial final domestic demand in Newfoundland, Prince Edward Island, Quebec, Ontario and British Columbia.

## TRANSPORTATION AND EMPLOYMENT

- In 2000, transportation employment, with close to 853,600 jobs, increased by 2.2 per cent over the previous year.
- Trucking, the transportation sector's major employer, accounted for 37 per cent of transportation employment, followed by air transportation.
- In transportation service operations, employment in rail transportation declined by fewer than 2,000 employees between 1998 and 1999. In trucking, medium and large for-hire trucking firms employed more people in 1999 than in 1998. In the bus industry, a two per cent increase in the number of full-time employees was reported in 1999. The number of people working in the marine transport industry reached over 30,000 in 2000, its highest level in the last five years. For the air transportation industry as a whole, the increase in employment between 1998 and 1999 was marginal. Level I–III air carriers had an increase in employment, while Level IV carriers had a decline.
- With respect to transportation infrastructure, rail and port-related employment declined, while airport-related employment increased.
- Transportation-related employment associated with federal and provincial government services declined.
- In 2000, average weekly earnings increased for all modes of transportation. Trucking and urban transit had the largest increases.
- The transport sector in 2000 recorded its highest number of work stoppages since 1996. However, the workers involved were minimal compared to the numbers involved in work stoppages during 1999.

## TRANSPORTATION AND TRADE

- In 1999, domestic trade of both services and goods increased. The split between intraprovincial and interprovincial trade remained the same at 85 per cent and 15 per cent, respectively.
- Between 1993 and 1999, the volume of goods generated by domestic trade increased from 372 million tonnes to 456 million tonnes. The greatest share,



between 46 and 50 per cent, moved by rail, followed by trucking, which increased its share from 38 to 43 per cent over this period. The marine share decreased and air carried less than one per cent of the total goods' traffic.

- In 1999, containerized freight represented approximately seven per cent of rail tonnage and almost one per cent of domestic marine tonnage.
- The increased level of trucking activity was due to an increase in manufacturing shipments.
- In 1999, exports and imports of both goods and services amounted to \$391 billion and \$362 billion, respectively, compared with \$189 billion for total interprovincial trade.
- Of total Canadian exports in 2000, 87 per cent went to the United States. Trucking accounted for 60 per cent of exports to the United States and 80 per cent of imports from the United States. On a tonnage basis, pipelines ranked first, followed by trucking, rail and marine. Ontario accounted for nearly two thirds of Canada's trade with the United States.
- One third of Canada's total imports came from countries other than the United States, with the marine mode responsible for 70 per cent of such trade activities. The air mode, however, continued to increase its share of non-US imports to Canada.

## TRANSPORTATION AND TOURISM

- In 1999, tourism spending in Canada totalled \$50.1 billion, a 6.5 per cent increase over the previous year. Of this amount, \$20.1 billion was spent on transportation, with air accounting for \$11.6 billion. The increase in the price of fuel in 2000 translated into an increase of transportation spending related to tourism.
- Of total tourism expenditures in Canada in 1999, Canadians spent 69 per cent. Foreign visitors' spending in Canada rose by 7.7 per cent. Ontario had the lowest percentage increase in non-resident tourism spending.
- The number of domestic travel trips taken by Canadians increased by just under one per cent in 1999. On a per capita basis, each Canadian took 4.8 trips throughout the year. Thirty nine per cent of Canadians' total trips were for pleasure. The automobile was used for close to 92 per cent of all trips.
- The number of travellers crossing Canada's borders in 2000 rose by 0.3 per cent. Overall travel between Canada and the United States increased by about 0.4 per cent in 2000, with US travel to Canada falling and Canadian travel to the United States rising. The

number of Canadians making overnight business trips to the United States continued to increase. The automobile was used for most Canada-US travel in 2000.

- A total of 4.6 million visitors from overseas countries came to Canada in 2000, a 4.9 per cent increase from 1999. The increase in visits by Asians to Canada, at 6.8 per cent, was significant, but visitors from Australia, New Zealand, and the United Kingdom also increased substantially.
- The number of Canadians travelling overseas increased 6.2 per cent in 2000.

## TRANSPORTATION INFRASTRUCTURE

- In 2000, changes in Canada's rail network were minimal, with the total number of route-kilometres reduced by 0.1 per cent. Of the 1,100 kilometres of lines rationalized in 2000, 77 per cent were transferred. About 70 per cent of line discontinuances occurred in Alberta, while 63 per cent of the transfers to other operators were observed in Saskatchewan.
- Canada's road network is over 1.4 million kilometres, of which 1.2 million kilometres fall under the local roads classification. The remaining 200,000 kilometres is made up of primary and secondary highways under provincial/territorial jurisdiction and major urban arterial and collector roads under municipal/local control.
- Over 140 billion vehicle-kilometres were driven on the primary highway network for an annual average of 4,700 vehicles per day. Annual car traffic between Canada and the United States has stabilized at 77 million crossings, while truck traffic has grown at an average rate of over seven per cent per year since 1991 to reach the current 13.6 million crossings per year. Twenty Canada-US border crossing sites accounted for 73 per cent of total vehicle movements.
- At the end of 2000, 382 of the 549 public ports and public port facilities under Transport Canada's control and administration had been transferred, deproclaimed or demolished.
- Traffic on the two sections of the St. Lawrence Seaway was down in 2000 by over one million tonnes from 1999, reflecting a decrease in traffic of iron ore, coal and other bulk commodities.
- Three of Canada's four pilotage authorities faced financial deficits at the end of 2000.
- The net expenditures of the Canadian Coast Guard increased slightly in 1999/2000 from the previous fiscal year.

- Aircraft arrivals and departures at Canadian airports during the first eight months of 2000 totalled 4.9 million, close to a five per cent drop below the same period in 1999.
- The eight per cent reduction in NAV Canada's user fees introduced in 1999 was maintained in 2000.
- New airport authorities took over the operation of the Halifax International and Jean Lesage International (Quebec City) airports. Financial results of 16 airport authorities for 1999 showed that on average they generated \$14.81 in revenues per passenger and incurred \$11.35 in expenses per passenger. In 2000, 39 airports had projects approved for funding under the Airports Capital Assistance Program.

## INDUSTRY STRUCTURE

- Changes to the structure of the Canadian rail industry in 2000 were modest. While several new shortlines were created, there were only marginal changes to the ownership structure of the shortline sector.
- Canadian motor carriers TCT Logistics, Kleysen Transport, Kayway Logistics, TransForce Inc., Clarke Inc. and Trimac were among the trucking firms involved in mergers and acquisitions in 2000. The latter two firms were also active in the Canada-US marketplace.
- The number of bankruptcies in the trucking industry increased in 2000 for a second consecutive year, bringing the total very close to its highest 1990s level.
- In 2000, FirstGroup PLC of the United Kingdom acquired Hertz, a group of companies primarily involved in school bus sales and services in Saskatchewan and the Northwest Territories. Laidlaw, a major school bus operator and the largest scheduled bus service operator in North America, faced financial difficulties in 2000.
- The concentration in ownership trend in liner shipping continued in 2000, with the top 20 companies controlling 76 per cent of the world fleet. CP Ships acquired TMM's shares in Americana Ships, as well as the Christensen Canadian African Line.
- In the domestic marine industry, Algoma Central Corporation and Upper Lakes Group pooled their fleet in 2000 into a single new entity, Seaway Marine Transport. CSL Group purchased the Upper Lakes group stake in Marbulk Canada. Rotterdam-based Smit International acquired Rivtow Marine Ltd., an important tugboat company in British Columbia.
- During the first half of 2000, Air Canada completed its acquisition of Canadian Airlines Corporation. In response to this restructuring of the airline industry, the federal government introduced Bill C-26. Bill C-26 addressed the government's plan to protect the public interest, increase consumer protection and ensure competition in air service.

## FREIGHT TRANSPORTATION

- The combined Canadian rail operations of CN and CPR generated an increase in total revenue tonne-kilometres in 1999, totalling 271 billion. The output of their North American systems also increased in 2000, reaching 379 billion tonne-kilometres. Exports were a major source of this rail traffic growth.
- Between 1989 and 1999, Canadian for-hire trucking firms saw their international traffic increase at an average annual rate of 12.4 per cent, compared with a 4.2 per cent increase in their domestic traffic. In 1999, international traffic represented 76 billion tonne-kilometres, compared with 82 billion tonne-kilometres for domestic traffic.
- In 2000, over 270,000 Class 8 trucks (gross weight of 15,000 kilograms or more) were registered in Canada, three per cent more than in 1999. There were also over 390,000 registered trucks with gross weights between 4,500 and 15,000 kilograms.
- Marine handled freight traffic totalled 334 million tonnes in 1999, 1.9 per cent more than in 1998. Of this total, 105.8 million tonnes came from domestic flows, 101.9 million tonnes from Canada-US traffic and 179.2 million tonnes from overseas flows. Canada-US traffic flows increased by 1.8 per cent from 1998, while the overseas flows decreased by 0.1 per cent.
- The change in the total tonnes of air cargo carried by Canadian air carriers between 1998 and 1999 was not significant. In 1999, they carried a total of 826,000 tonnes. Of this total, 501,000 tonnes came from domestic flows, 91,000 from Canada-US flows and the remaining 234,000 tonnes from other international flows.

## PASSENGER TRANSPORTATION

- Rail passenger traffic increased in 1999 by three per cent to over 4.1 million. VIA Rail accounted for 92 per cent of this traffic, with four Class II rail carriers carrying the rest. In terms of passenger-kilometres, traffic increased by about nine per cent to 1.59 billion. All carriers contributed to this growth. In Vancouver, Toronto and Montreal, passenger traffic on commuter rail lines increased by 44 per cent between 1994 and 1999.

- The number of passengers using scheduled intercity bus services declined in 1999 by almost one million passengers. While there is no passenger traffic data available for charter bus services, the bus-kilometres figures are indicative of an increase in patronage in the 1990s, with the 1999 figure being equivalent to that of the preceding year. Urban transit ridership showed an increase of 2.2 per cent in 1998 and one of 1.5 per cent in 1999.
- In 2000, 16.8 million cars and light trucks were registered, a slight increase over 1999. The distribution of the cars and light trucks more or less follows the distribution of Canada's population.
- In marine transportation, international cruise ship traffic increased at each of the five major ports in 2000. Vancouver passed the one million threshold for the number of cruise passengers handled annually, while the Port of Halifax also reached new heights at over 138,000 passengers. Cruise traffic was also up at Montreal and Quebec City but the largest increase was at Saint John, with a traffic level of over 100,000 passengers. This traffic could have been even higher had it not been for the bankruptcy of Premier Cruise Lines of Florida in September 2000.
- British Columbia Ferry Corporation carried 21.4 million passengers and 7.9 million vehicles in 1999/2000. Marine Atlantic Inc. increased its traffic, handling 478,000 passengers, 150,000 passenger vehicles and 77,000 commercial vehicles.
- The number of international air passengers increased by four per cent in 1999, with the growth coming from the Atlantic and southern markets. Preliminary statistics for 2000 showed a seven per cent increase in international passenger traffic. In domestic air services, the increase in passenger traffic in 1999 was about 2.8 per cent. In transborder air services, there was an increase of 4.8 per cent in the total number of passengers carried.
- With respect to passenger transportation services, from 1994 to 1999 VIA Rail's long-haul service output grew by 3.1 per cent per year, while prices increased by 4.3 per cent per year; on its corridor services, prices increased on average by 2.5 per cent per year while demand grew by 0.7 per cent per year. In the bus industry, output increased by 2.6 per cent per year, and prices declined by 0.4 per cent per year. In air transportation, output of domestic air services grew at the annual rate of 6.3 per cent, while for international services, the annual rate of growth was 10.4 per cent. With respect to prices, in domestic services, they grew on average by 0.5 per cent per year between 1994 and 1999, compared with 1.8 per cent for international services.
- Between 1994 and 1999, rail freight total factor productivity increased by 3.9 per cent per year on average. In trucking, an average annual two per cent productivity gain was achieved over the same period. In VIA Rail's operations, a 5.1 per cent annual productivity improvement was achieved over this period, compared with 3.6 per cent in the bus industry and 3.8 per cent in the air transportation industry.
- In 1999, increased profits were reported by Class I rail freight carriers. VIA Rail improved its revenue/cost recovery ratio in 1999, achieving a 56.7 per cent ratio. Transit systems also improved their cost recovery ratio in 1999. A slight deterioration in operating ratios was observed in both the trucking and intercity bus industries in 1999. The improvement in the air transportation industry's financial performance in 1999 was insufficient to restore viability.
- A simulation of the effects of the increase in fuel prices in 2000 showed that transport fuel costs would have increased by 30 per cent, consequently raising total costs by 3.5 per cent. Assuming that such cost increases were all passed on to users, transport price increases of approximately 3.9 per cent would have been needed to offset the fuel cost increases. By mode, the impact of fuel price increases on prices would have been 3.2 per cent for rail freight services, four per cent for VIA Rail services, 3.3 per cent for trucking, 2.3 per cent for intercity bus services, 2.2 per cent for transit services, and 5.7 per cent for air services.

## **PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR**

- Between 1998 and 1999, the productivity increase in the transportation industry was about 2.4 per cent, compared with 1.7 per cent for the economy.
- Shippers received a portion of the benefits of the productivity gains achieved in different transportation sectors. Between 1994 and 1999, there were real term price declines of 0.8 per cent per year in rail freight transportation, 0.3 per cent annually in trucking.



*The 2000 annual report presents the state of transportation in Canada using the most current information available.*

When the *Canada Transportation Act* was passed in 1996, the Minister of Transport assumed the statutory responsibility to table an annual report on the state of transportation in Canada. The mandate for the report is spelled out in Section 52 of the Act:

"Each year the Minister shall, before the end of May, lay before Parliament a report briefly reviewing the state of transportation in Canada in respect of the preceding year, including:

- (a) the financial viability of each mode of transportation and its contribution to the Canadian economy and the development of the regions;
- (b) the extent to which carriers and modes of transportation were provided resources, facilities and services at public expenses;
- (c) the extent to which carriers and modes of transportation received compensation, indirectly or directly, for the resources, facilities and services that were required to be provided as an imposed public duty; and
- (d) any other transportation matters the Minister considers appropriate."

In this fifth report submitted by the Minister, readers will find an overview of transportation in Canada, based on the most current data and information available. With a broad scope unconstrained by jurisdictional considerations, this overview of transportation in Canada is comprehensive. There is, however, one exception: pipeline transportation activities — important for the transportation of oil, petroleum and gas products — remain outside the report's scope.

Data availability has always been a key limiting factor with this annual report. Ideally, it should cover the year 2000 throughout, but this absolutely up-to-date reporting occurs only where the necessary data were available. The report does, however, consistently review the most

current year possible. In addition, the report examines trends in the transportation sector. Because of this coverage, previous reports may prove important to those interested in information over the long term.

Even with its data limitations, the report highlights Canada's major transportation "events" in 2000. Throughout the year, energy price increases were important. Accordingly, the report pays special attention to this issue, addressing the subject in many chapters from different perspectives. For instance, the chapter on the economy looks at the impact of energy price increases on major macro-economic indicators, while the chapter on energy and environment discusses energy prices themselves. The chapter on price, productivity and financial performance examines the potential impact of energy price increases on cost structure and price changes in each mode.

The content of this report, as in the last two reports, is not mode-specific, which allows for a horizontal view of transportation. The world is changing, and the demands that transportation users are placing on the system are changing as market conditions change. This horizontal approach makes it easier to identify similarities and differences in changes taking place across modes of transportation and to see when changes are unique to a mode.

The chapters in this report follow a logical sequence. The first chapter examines the Canadian economy and illustrates the state of transportation in Canada and the forces at play in 2000. The chapter on government transportation spending and revenues follows, showing the net fiscal budgetary attention devoted by governments to the sector. In addition, this chapter addresses a specific aspect of the Annual Report mandate. It is important to keep in mind, however, that government spending provides only a partial picture of the level of expenditures and investment in transportation operations and infrastructure.



Chapters on key subjects, including safety, energy and environment, regional economies, employment, trade, and tourism come next. The safety chapter is particularly important because it deals with one of the key priorities for Canada's transportation system. As mentioned earlier, the energy and environment chapter is also important this year because it gives special attention to energy price increases.

As in previous years, the regional economies chapter gives an overview of transportation by region. Once again, it was impossible to isolate the Nunavut territory because the data required were not available. Next is the chapter on transportation and employment, which shows that the sector is a significant source of employment in the Canadian economy. It also reviews the management-labour issues that the sector confronted in 2000.

Two chapters follow on activities that are growing in importance for the Canadian economy: trade and tourism. For trade, the emphasis is on freight-related activities both in terms of flows and modal distribution. Tourism includes all passenger transportation activities tied to leisure, business and other purposes.

Five chapters on an assortment of transportation topics come last. The chapter on infrastructure illustrates Canada's overall transportation infrastructure, without which transportation services could not be offered. In addition, this chapter addresses incidental services of importance to the safe and secure operations of the transportation system — for example, the air navigation system and marine pilotage services. Three chapters then look at transport service industries from different perspectives: industry structure, freight transportation and passenger transportation. The final chapter looks at prices, productivity and financial performance in the transportation sector.

Sources outside the department have been used quite extensively for the data in this report. The validation of these external data rests first and foremost with the organizations that produce and generate it. Proper care and attention was dedicated throughout the production of this report to data quality and data limitations. Data availability and limitations constraining the analyses reported are indicated within the report. As much as possible, when current timely data were not available, it was **not** estimated. In addition, this report analyses the most current state of the country's transportation system and does **not** try to predict what it may be in coming years.

# TRANSPORTATION AND THE CANADIAN ECONOMY

# 2

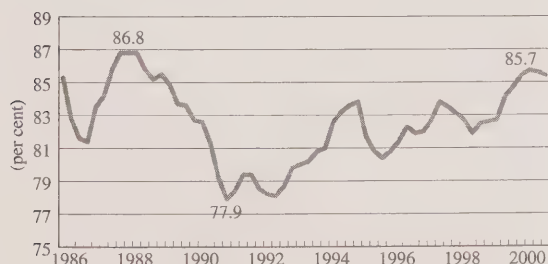
*The expansion of the Canadian economy continued in 2000 with the strong economic growth spread across all regions of Canada.*

Transportation activity reflects the state of the economy as a whole and this chapter sets out the developments in the economy as a basis for understanding the factors that have affected the demand for transportation services. It also looks at the contribution of transportation to the economy both from the perspective of transportation industries and from the overall demand for transportation in the economy, including both commercial and private transportation.

## THE CANADIAN ECONOMY

The Canadian economy continued to expand in 2000 — the ninth year of uninterrupted growth — as real Gross Domestic Product (GDP) increased 4.5 per cent, the highest rate of increase since 1994. The economy moved close to capacity as non-farm goods industries operated at 85.7 per cent of capacity in the second quarter. There were reports of firms facing constraints due to skilled labour shortages. This was the seventh straight quarter of increased capacity utilization. There were signs of easing, however, in the latter part of the year as a slowdown of the US economy affected production and consumption.

**FIGURE 2-1: GOODS INDUSTRIES CAPACITY UTILIZATION, 1986 – 2000**



Source: Statistics Canada, Cansim matrix 3140

Figure 2-1 shows how close to capacity the goods industry worked in the Canadian economy from 1986 to 2000.

Table 2-1 compares various general economic indicators over the last year and the last five years, and Figure 2-2 charts the growth of real GDP since 1996.

For the second year in a row, business investment spending provided a major source of increased demand in the economy, with a 10.6 per cent increase in real

**TABLE 2-1: GENERAL ECONOMIC INDICATORS**

	2000	Percentage change 1999 – 2000	Annual percentage change 1995 – 2000
<b>GDP at Factor Cost</b> (millions of 1992 dollars)			
Total Economy	786,642	4.5	3.5
Goods	257,563	4.7	3.4
Agriculture	12,975	(3.2)	2.1
Forestry	4,677	1.5	0.1
Mining	27,339	6.4	1.1
Manufacturing	143,124	5.7	4.6
Construction	42,346	3.3	3.5
Services	529,079	4.4	3.5
Retail Trade	50,781	5.8	4.7
Transportation	32,114	5.6	4.2
<b>Merchandise Trade</b> (millions of dollars)			
Exports	417,659	15.8	9.5
Imports	363,164	11.1	9.6
<b>Employment</b> (thousands)	14,912	2.6	2.2
<b>Population</b> (thousands)	30,750	0.8	0.9
<b>Income</b> (dollars)			
Personal Disposable Income per capita	20,284	4.7	2.7
<b>Canadian Dollar</b> (US cents per unit)			
	67.3	0.0	(1.6)
<b>Prices</b> (1992=100)			
Total Economy	112.7	3.6	1.1
Consumer Price Index			
All Items	113.5	2.7	1.7
Transportation	130.7	5.0	2.9

Source: Statistics Canada, Cat. 11-010, 13-001, 15-001, 62-010; Bank of Canada

FIGURE 2-2: REAL GDP BY MAJOR SECTOR, 1996 – 2000



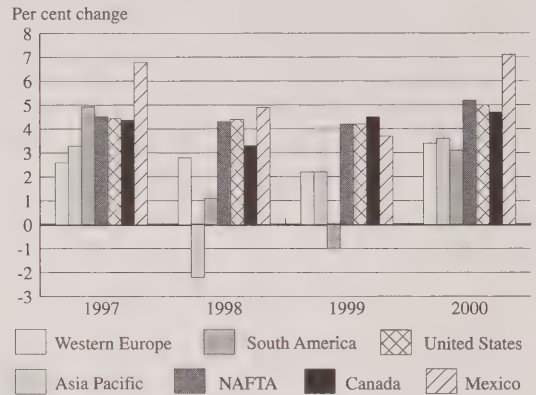
Source: Statistics Canada, Cat. 15-001

terms. Within business, investment spending on machinery and equipment rose strongly, at 18.9 per cent, a rate comparable with that of the previous year. Spending on telecommunications, computers and office equipment rose 38 per cent in 2000, and accounted for 49 per cent of total business investment. Consumer spending rose four per cent, up slightly from the 3.5 per cent increase the previous year. Government spending on goods and services rose 2.4 per cent, while government capital spending rose 16.2 per cent.

For the fourth year in a row, the manufacturing industries surged ahead, rising 5.7 per cent in 2000; however, the fourth-quarter decline in production in the automotive and electronic goods industries slowed the advance of the sector. Mining activity rose 6.4 per cent, reflecting strong increases in mineral fuel production. Overall production in the primary goods industries rose 2.9 per cent as agriculture activity fell 3.2 per cent and forestry activity increased 1.5 per cent. Construction activity was up 3.3 per cent, due to very strong residential building activity. Retail trade had a good year, increasing 5.8 per cent, although the fall in automobile sales dampened activity here. Transportation activity was up 5.6 per cent, its fourth year of good growth.

As Figure 2-3 shows, the year 2000 was a good one economically for all regions of the world. The US economy posted real economic growth of five per cent, although growth rates decelerated in the second half of the year as business investment and personal consumption expenditures fell. While Canadian merchandise exports to the United States started to falter in the last two quarters, for the year as a whole they rose 16.2 per cent to reach a record \$360 billion. Western European real economic growth is expected to be

FIGURE 2-3: REAL GDP IN CANADA AND OTHER REGIONS, 1997 – 2000



Note: Gross Domestic Product (GDP) at market prices.

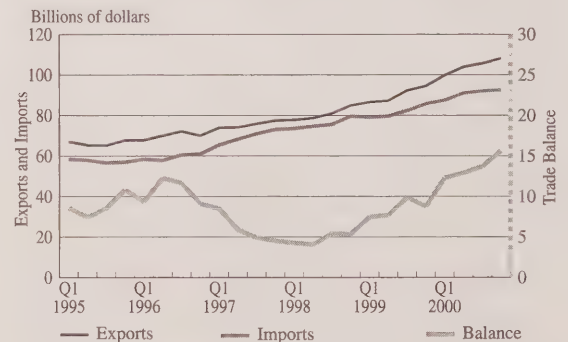
Source: Statistics Canada, Cat. 13-001, 11-010, US Dept. of Commerce, WEFA

3.4 per cent in 2000; merchandise exports destined there also increased sharply, by 15.2 per cent. The Asia Pacific region (including China) is expected to show 3.6 per cent in real economic growth in 2000, up from 2.6 per cent in 1999. Japan's economy is growing slowly, and its real GDP increased 1.9 per cent in 2000 up from the 0.8 per cent growth in 1999. Merchandise exports to Japan rose 7.6 per cent in 2000. South America's economy is expected to show growth at 3.6 per cent, a reversal of the one per cent drop in 1999. Like Canada, Mexico benefited from the economic boom in the United States and in 2000 economic activity is expected to increase by about seven per cent.

As illustrated in Figure 2-4, Canada had a record merchandise trade surplus of \$54 billion in 2000, up from \$34 billion in 1999. Merchandise exports grew

FIGURE 2-4: MERCHANDISE TRADE, 1995 – 2000

(Quarterly, Seasonally Adjusted-Balance of Payment Basis)



Source: Statistics Canada, Cat. 65-001

15.8 per cent to \$418 billion, while imports grew 11.1 per cent. Exports to the United States, which made up 86 per cent of all exports, increased 16.2 per cent. Imports from the United States, which made up 74 per cent of all imports, grew only 7.3 per cent. Canada's trade surplus with the United States rose to \$92.1 billion, a 50 per cent increase from 1999.

Increases in the export of energy products and machinery and equipment were responsible for the rise in total exports. In 2000, exports of crude oil, natural gas and electricity to the United States rose 76.8 per cent to \$54 billion, while machinery and equipment exports rose 22.8 per cent. Telecommunications equipment exports rose 59 per cent. Exports of automotive products increased less than one per cent, while forestry exports increased 5.8 per cent.

In terms of imports in 2000, machinery and equipment purchases by Canadians rose 13.5 per cent to \$122 billion and energy product imports rose 65.8 per cent to \$18 billion.

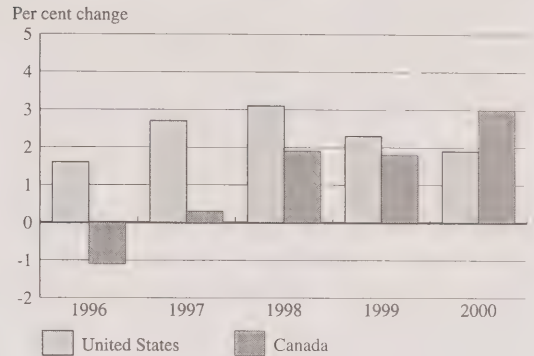
In 2000 employment in Canada was 14.9 million an increase of 378,000 or 2.6 per cent and the fourth year of strong growth. Employment growth was strongest in the service sector where it grew 2.8 per cent while it grew only 2.2 per cent in the goods producing sector. These increases compare to a less than one per cent increase in the total population and a 1.3 per cent increase in the population fifteen years and older from which the labour force is taken.

While the average value of the Canadian dollar in 2000 was unchanged from 1999, at US\$0.673, it trended down slightly during the year to close at US\$0.667 from US\$0.69 in January. The broadest indicator of prices, the GDP deflator, rose 3.6 per cent in 2000, while the Consumer Price Index (CPI) rose 2.7 per cent. Energy prices had a big effect on price levels. The CPI, excluding the effect of energy prices, rose only 1.5 per cent while energy prices paid by consumers rose 16.2 per cent. Energy price increases affected the prices that consumers paid for transportation, as these rose five per cent in 2000.

The strong economy in 2000, along with tax reductions and employment equity payments, meant that real disposable income per capita rose three per cent, just over one per cent more than the increases of the past two years. This meant that real disposable income per capita rose at a greater rate in Canada than in the United States.

Figure 2-5 compares real personal disposable income per capita of Canadians and Americans from 1996 to 2000.

FIGURE 2-5: REAL PERSONAL DISPOSABLE INCOME PER CAPITA, 1996 – 2000

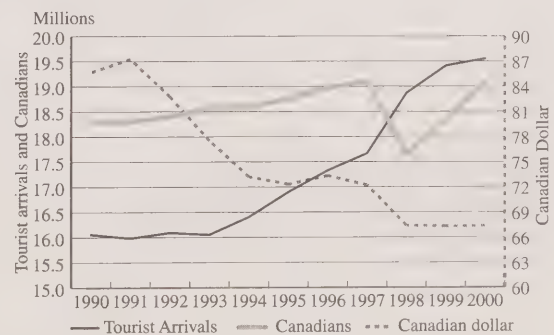


Source: Statistics Canada, Cat. 13-001; US Department of Commerce

In 2000, the number of Canadians engaging in international travel increased on all fronts and in total rose 1.6 per cent. Travel to the United States rose 1.1 per cent, while trips to other countries rose 6.2 per cent. Total trips by foreigners to Canada rose only 0.4 per cent. Trips by Americans fell 0.9 per cent, as both their same-day and overnight trips declined. Trips by other international travellers increased by 4.9 per cent, as European travellers increased their trips by 3.4 per cent and trips from residents of Asia rose 6.8 per cent.

Figure 2-6 shows the amount of international overnight travel to Canada over the last decade.

FIGURE 2-6: INTERNATIONAL OVERNIGHT TRAVEL, 1990 – 2000



Source: Statistics Canada, International Travel Survey, Special Compilations; Bank of Canada



## OVERVIEW OF PROVINCIAL ECONOMIC PERFORMANCE

As Table 2-2 shows, the strong economic growth in 2000 was spread across regions of Canada. Only Nova Scotia is expected to have a real growth rate below three per cent. Alberta and Newfoundland had the highest growth of economic activity, fuelled by increased production in the oil and gas industries. Nova Scotia was affected by the end of construction for the Sable Island Project. In New Brunswick, construction and manufacturing activity boosted growth. Ontario and Quebec started to be affected by the weakening US economy in the later part of the year, but had nevertheless good economic growth. Manitoba's manufacturing industries did well in 2000. Saskatchewan benefited from the petroleum and potash industries, although grain prices were weak. British Columbia continued to recover from the effects of the Asian downturn and it has benefited from being close to the US west coast, a region with strong economic performance and a destination for its exports.

**TABLE 2-2: PROVINCIAL ECONOMIC GROWTH**  
(GDP at factor cost in 1992 dollars)

	<i>Per cent change 1999–2000<sup>1</sup></i>	<i>Per cent change 1995–2000</i>
Newfoundland	5.7	3.1
Prince Edward Island	3.8	2.3
Nova Scotia	2.4	2.6
New Brunswick	5.5	3.1
Quebec	4.6	3.0
Ontario	5.3	4.1
Manitoba	3.4	3.3
Saskatchewan	3.7	3.2
Alberta	6.3	4.3
British Columbia	3.1	2.2

<sup>1</sup> Forecast.

Source: Statistics Canada, Conference Board of Canada

## CONTRIBUTION OF TRANSPORTATION TO THE ECONOMY

The relative importance of transportation to the economy can be looked at from two different perspectives — as commercial or for-hire transportation, or as transportation-related demand. Commercial transportation refers to those service industries that move passengers and goods for a fee, such as airlines, railways and trucking firms. Transportation demand, on the other hand,

measures all the expenditures on goods and services that allow for the mobility of households, businesses and government. This section is organized according to these two perspectives.

## COMMERCIAL TRANSPORTATION

The importance of commercial transportation or transportation industries can be assessed through the value-added of the industries. Value-added can be seen primarily as payments made by industry to workers or shareholders. It is the commonly used economic measure for assessing the relative importance of industries to the economy, and is used as a measure of the supply of transportation.

**TABLE 2-3: COMMERCIAL TRANSPORTATION AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)**

<i>Industries</i>	<i>(Millions of real 1992 dollars) Value-added 2000</i>	<i>Per cent of Gross Domestic Product (GDP)</i>	<i>Per cent Annual Growth 1999 – 2000</i>	<i>Per cent Annual Growth 1995 – 2000</i>
Air	3,951	0.5	2.8	2.1
Railway	5,070	0.6	7.0	5.4
Marine	2,625	0.3	10.0	4.3
Truck	13,330	1.7	6.8	7.0
Public Passenger Transit	3,439	0.4	4.0	1.0
Other Transport <sup>1</sup>	3,699	0.5	1.1	(0.8)
<b>Transportation Industries</b>	<b>32,114</b>	<b>4.1</b>	<b>5.6</b>	<b>4.2</b>
<b>Total GDP</b>	<b>786,642</b>	<b>100.0</b>	<b>4.5</b>	<b>3.5</b>

<sup>1</sup> Refers principally to taxis, freight forwarders and other miscellaneous transport.

Source: Statistics Canada, Gross Domestic Product by Industry, Cat. 15-001

In 2000, transportation industries accounted for 4.1 per cent of Gross Domestic Product (GDP). Trucking, at 1.7 per cent, made up the largest share of this, while the domestic marine industry, at 0.3 per cent, accounted for the smallest share.

Transportation industries continued to grow faster than the economy in 2000, as they have consistently over the last five years. This growth was dominated by the freight industries — marine (10 per cent), rail (seven per cent) and trucking (6.8 per cent). The air passenger transport industry growth was slow in 2000, while passenger transit industries grew by four per cent, slightly more than the GDP. Table 2-3 breaks down the commercial transportation as a percentage of GDP.

## TRANSPORT DEMAND

As mentioned earlier, transportation demand refers to all expenditures on goods and services related to the transportation needs of households, private business and government. In contrast to transportation industries, it is measured using a different method for calculating GDP — the final demand for all goods and services in the economy. Final demand is the sum of personal expenditures, investment, government spending and the trade balance (exports minus imports).

As Table 2-4 shows, transportation demand represented a much larger share of the economy than transportation industries in 2000,<sup>1</sup> with transportation demand accounting for 12.8 per cent of GDP. Transportation demand consists primarily of expenditures on transportation equipment (e.g., cars and trucks) and associated infrastructure (e.g., roads). Transportation equipment is the leading expenditure item in the exports, imports, personal expenditures and business investment sectors. In the government sector, the vast majority of both investment and spending is on roads. Appendix 2-1 gives a more detailed breakdown of personal expenditures, while Chapter 3 of this annual report discusses government expenditures in more detail.

In contrast to transportation industries, transportation demand declined in 2000, decreasing by 0.6 per cent after a 4.5 per cent average annual growth over the last five years. This slowdown was largely due to reduced exports of transportation equipment, as well as reduced inventory accumulation of vehicles, due to the high level of inventory stock. Annual growth in fuel and lubricant purchases by consumers was also negative, reflecting higher fuel prices in 2000.

A slightly different measure of the importance of transportation demand is final domestic demand. This is a measure of expenditures by Canadians made up of personal expenditures, investment and government spending, but excluding foreign trade (exports and imports). This measure generates a somewhat lower estimate of the share of transportation demand — 11.8 per cent of final domestic demand in 2000 — as can also be seen in Table 2-4. This lower value is primarily the result of excluding the trade surplus generated by exports of transportation equipment. In 2000, annual growth in domestic transportation demand (2.5 per cent) was well below the growth in final domestic demand (5.2 per cent), again reflecting growth in inventories and the negative growth in purchases of transportation fuels.

TABLE 2-4: TRANSPORT DEMAND AS A PROPORTION OF GROSS DOMESTIC PRODUCT (GDP)

	(Millions of real 1992 dollars) 2000	Per cent of Gross Domestic Product (GDP)	Per cent Annual Growth 1999 – 2000	Per cent Annual Growth 1995 – 2000
<b>1) Personal Expenditures on Transportation</b>	<b>72,643</b>	<b>7.9</b>	<b>3.3</b>	<b>4.6</b>
New and Used				
Transportation Equipment	29,465	3.2	3.6	7.8
Repair and Maintenance Expenditures	11,225	1.2	9.0	2.5
Transportation Fuels and Lubricants	14,643	1.6	(2.2)	1.5
Other Services related to Transportation Equipment	6,875	0.7	3.3	2.5
Purchased Commercial Transportation	10,435	1.1	4.6	4.5
<b>2) Investment in Transportation</b>	<b>25,632</b>	<b>2.8</b>	<b>(0.7)</b>	<b>4.0</b>
<b>Business Investment in Transportation</b>	<b>19,937</b>	<b>2.2</b>	<b>(2.1)</b>	<b>6.4</b>
Transportation Infrastructure (roads and railways)	1,033	0.1	(8.2)	(4.0)
Transportation Equipment	16,609	1.8	5.9	9.5
Inventories	2,295	0.2	(35.3)	(3.8)
<b>Government Investment in Transportation</b>	<b>5,695</b>	<b>0.6</b>	<b>4.6</b>	<b>(2.7)</b>
Transportation Infrastructure (roads)	5,156	0.6	4.0	(2.9)
Transportation Equipment	539	0.1	9.8	(0.3)
<b>3) Government Spending on Transportation</b>	<b>9,612</b>	<b>1.0</b>	<b>(7.7)</b>	<b>(1.4)</b>
Infrastructure Maintenance (roads)	4,681	0.5	(10.8)	(1.8)
Urban Transit Subsidies	2,047	0.2	(32.2)	(1.7)
Other Spending	2,884	0.3	34.4	(1.7)
<b>4) Exports</b>	<b>81,109</b>	<b>8.8</b>	<b>0.2</b>	<b>6.0</b>
Transportation Equipment, including parts	73,313	8.0	(0.4)	6.2
Commercial Transportation	7,796	0.8	6.5	4.4
<b>5) Imports</b>	<b>71,225</b>	<b>7.7</b>	<b>3.1</b>	<b>6.6</b>
Transportation Equipment, including parts	60,902	6.6	1.8	7.4
Commercial Transportation	10,323	1.1	11.8	2.6
<b>Total Transport Related Final Demand (1+2+3+4-5)</b>	<b>117,771</b>	<b>12.8</b>	<b>(0.6)</b>	<b>3.6</b>
<b>Gross Domestic Product at Final Prices</b>	<b>921,485</b>	<b>100.0</b>	<b>4.7</b>	<b>3.7</b>
<b>Total Transport Related Domestic Demand (1+2+3)</b>	<b>105,592</b>	<b>11.8</b>	<b>2.5</b>	<b>4.0</b>
<b>Final Domestic Demand</b>	<b>897,325</b>	<b>100.0</b>	<b>5.2</b>	<b>3.9</b>

Source: Statistics Canada, National Income and Expenditure Accounts, 13-001; unpublished data, Income and Expenditure Accounts Division; Transport Canada estimates

1 It should be noted that transport demand will tend to underestimate the value of commercial transportation, as much of commercial freight transportation is an intermediate service whose cost becomes embedded in the price of other non-transport demand goods, i.e. shoes, groceries, etc.

## APPENDIX 2-1:

## PERSONAL EXPENDITURES ON TRANSPORTATION, 1998

(Millions of 1992 dollars)

<i>Personal Expenditures on Transportation</i>	<i>1998 Value</i>	<i>Per cent of total</i>
New automobiles	10,748	15.3
Used motor vehicles (net)	6,364	9.1
New trucks and vans	10,287	14.6
Bicycles and motorcycles	2,022	2.9
Boats, aircraft, and accessories	810	1.2
<b>Transportation Equipment Purchases</b>	<b>30,231</b>	<b>43.0</b>
Motor fuels and lubricants	14,447	20.6
Motor vehicle parts and accessories	4,810	6.8
Motor vehicle maintenance and repairs	4,951	7.0
Driving licences, lessons and tests	2,190	3.1
Motor vehicle renting	540	0.8
Auto insurance	2,875	4.1
<b>Transportation Equipment Operating Expenses</b>	<b>29,813</b>	<b>42.4</b>
Bridge and highway tolls	116	0.2
Parking	609	0.9
<b>Road Infrastructure Use Charges</b>	<b>725</b>	<b>1.0</b>
Urban transit	1,360	1.9
Railway transport	129	0.2
Interurban bus	449	0.6
Air transport	5,885	8.4
Water transport	149	0.2
Taxis	443	0.6
Moving and storage	518	0.7
Commissions paid to tour operators	599	0.9
<b>Commercial Transportation</b>	<b>9,532</b>	<b>13.6</b>
<b>Total Personal Expenditures on Transportation</b>	<b>70,301</b>	<b>100.0</b>

Source: Statistics Canada unpublished data, Income and Expenditure Accounts Division

# GOVERNMENT SPENDING ON TRANSPORTATION

# 3

*Transportation gross expenditures by all levels  
of government increased in 1999/2000.*

This chapter describes the transportation expenditures and revenues of all levels of government, by mode as much as possible and within the limitations of available information. The chapter first summarizes all transportation expenditures and revenues by level of government. It then gives a synopsis of federal and provincial revenues from transportation users, followed by a detailed examination of expenditures by level of government. Finally, it presents consolidated expenditures by mode.

This chapter gives an overview of the extent of resources provided at public expense to the transportation sector. When related to the information on facilities and services in other sections of this report, this gives a clear picture of the public sector involvement in transportation. An analysis of the extent of cost recovery in transportation is beyond the mandate of this annual report, however, and it would involve the cumbersome task of accounting for all the costs and revenues — direct and indirect — of the different levels of government that can be tied to transportation activities.

For instance, with respect to indirect costs associated with transportation activities, information would be needed to determine what portion of health-related costs are associated with transportation accidents and/or transportation emissions. It would also require information to measure precisely the revenues generated by levies resulting from the enforcement of transportation's rules and regulations.

## GOVERNMENT TRANSPORTATION EXPENDITURES

This section covers spending on transportation by all levels of governments and their agencies. Expenditures are, first, netted of federal government revenues (other

than fuel taxes) attributable to transportation users and government transfers received from other levels of government. Although the federal and provincial governments do not earmark tax revenues from transport users to fund transportation initiatives, their transportation revenues are compared with their transportation expenditures to illustrate the trends in the net fiscal pressure from the transport sector. Table 3-1 shows that government expenditures on transportation for the past five years have ranged from \$17 billion to \$18 billion. While federal expenditures have trended downward, provincial/territorial and local government transportation expenditures have shown an average increase of 5.5 per cent a year since 1996/97.

**TABLE 3-1: GOVERNMENTS' GROSS AND NET  
EXPENDITURES ON TRANSPORTATION,  
1996/97 TO 2000/01**

	(Millions of dollars)				
	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001 <sup>5</sup>
Transport Canada					
Expenses (Gross)	2,472	2,428	1,415	1,252	1,228
Other Federal Expenses (Gross)	1,013	997	880	738	696
Provincial/Territorial <sup>1</sup>	7,084	6,908	7,889	8,391	N/A
Local <sup>2</sup>	6,579	7,065	7,534	7,662	N/A
<b>Total Transport Expenditures</b>	<b>17,147</b>	<b>17,399</b>	<b>17,719</b>	<b>18,043</b>	<b>N/A</b>
Transport Canada Revenues	1,353	986	658	379	330
Other Federal Revenues <sup>3</sup>	31	40	42	46	48
Tax Revenues from Transport Users <sup>4</sup>	12,023	12,491	12,977	12,931	N/A
<b>Total Revenues from Transport Users</b>	<b>13,407</b>	<b>13,518</b>	<b>13,677</b>	<b>13,356</b>	<b>N/A</b>
<b>Net Expenditures</b>	<b>3,741</b>	<b>3,881</b>	<b>4,041</b>	<b>4,687</b>	<b>N/A</b>

Note: N/A = Not available.

More yearly data are available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

1 Net of federal transfers as reported by the provinces.

2 Calendar year basis; net of federal and provincial transfers.

3 Revenues from Coast Guard services and small port users.

4 From Table 3-4.

5 Forecast as of January 31, 2001, for full year.

Source: Main Estimates of the Government of Canada; Transport Canada, Finance Directorate; The Canadian Transportation Agency; Internal reports from several agencies and federal departments; provincial/territorial departments of transportation; Statistics Canada, Public Institutions Division, unpublished data



Transportation expenditures by all levels of government increased in 1999/2000 by \$324 million, or 1.8 per cent, from 1998/99. Expenditures by local and provincial governments actually showed an increase of 4.1 per cent. Federal transport expenses fell by 13 per cent in 1999–2000 and are forecasted to drop further in 2000/01 by 3.3 per cent from the previous fiscal year. When tax revenues from transport users are applied against transport expenditures, net expenditures reached an estimated \$4.7 billion in 1999/2000, up \$646 million from the previous year. In the mid-1990s, this figure was around \$7 billion.

## FEDERAL EXPENSES RELATED TO TRANSPORT FACILITIES AND SERVICES

The federal government provides transportation facilities and services in all modes. As shown in Table 3-2, these include airports and harbour/port operations, modal policy and safety services, and services rendered by the Canadian Coast Guard. Transport Canada also performs several multimodal activities, ranging from emergency preparedness services to the regulation and monitoring of the transport of dangerous goods.

From 1996/97 to 1999/2000, direct federal transport expenses have fallen from \$2.2 billion to \$1.35 billion. In 2000/01, the operating and capital expenses of the federal government in transport are forecast to drop by 2.3 per cent after several years of decline.

The Canadian Coast Guard represents the federal government's largest single expense in transport, with \$428 million forecast for 2000/01. The federal costs of operating federal ports and airports is forecast to reach \$213 million by 2000/01, \$116 million less than expenditures on safety and policy. This reflects Transport Canada's lesser role in operations and increased role in policy and safety.

**TABLE 3-2: FEDERAL OPERATING, MAINTENANCE AND CAPITAL EXPENDITURES, 1996/97 TO 2000/01**

	(Millions of dollars)				
	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001 <sup>a</sup>
Airports	396	186	140	123	91
Air Navigation Systems	554	-	-	-	-
Aircraft Services	59	56	64	51	59
Coast Guard	540	523	471	480	428
Ports and Harbours <sup>1</sup>	92	85	84	98	122
Roads and Bridges <sup>2</sup>	175	169	156	141	142
Air Safety and Policy <sup>3</sup>	110	113	125	142	151
Marine Safety and Policy	41	65	56	47	49
Road and Rail Safety and Policy <sup>4</sup>	36	36	40	40	38
Multimodal Policy and Safety <sup>5</sup>	79	101	106	90	91
Other Services <sup>6</sup>	31	29	32	35	37
Other <sup>7</sup>	109	103	95	96	107
Total	2,223	1,467	1,370	1,345	1,314

Note: More yearly data are available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

1 Includes expenses for small fishing ports by Fisheries and Oceans.

2 Includes contributions by Transport Canada to the Federal Bridge Corporation Limited, and expenses by the National Capital Commission, Public Works and Government Services Canada, Parks Canada, and Indian and Northern Affairs.

3 Includes expenses of the Civil Aviation Tribunal.

4 Increase in 1997/98 and 1998/99 expenditures related to the purchase of a ferry.

5 Includes expenses for regulation and the inspection of the transport of dangerous goods, and multimodal safety, policy and analysis.

6 Security and Emergency Preparedness, and Research and Development.

7 Corporate Services of Transport Canada and the Canadian Transportation Agency.

8 Forecast as of January 31, 2001, for full year.

Source: Transport Canada

## FEDERAL SUBSIDIES TO TRANSPORTATION

In 2000/01, total federal direct subsidies, grants and contributions are projected to be \$604 million, 5.5 per cent less than in 1999/2000. During 2000/01, subsidies to VIA Rail increased and highway transfers continued to decline, as transition and infrastructure programs wound down. The variations in marine subsidies shown in Table 3-3 are related to the purchase of ships for Marine Atlantic Ltd. and the transfer of harbours and wharves to Quebec. Since 1996/97, total subsidies and transfers have fallen by half. This major reduction is a result of the elimination of payments to NAV Canada, lower subsidies to Marine Atlantic Ltd., and reduced highway transfers. Table 3-3 presents more details.

**TABLE 3-3: DIRECT FEDERAL SUBSIDIES, GRANTS AND CONTRIBUTIONS BY MODE, 1996/97 TO 2000/01**

(Millions of dollars)

	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001 <sup>4</sup>
<b>Air Mode</b>					
Airport Operations	35	46	45	39	47
NAV Canada	292	686	216	-	-
Other	5	15	3	2	1
Total Air	331	747	264	40	48
<b>Marine Mode</b>					
Marine Atlantic	97	91	29	115	38
Other Crown Corporations	3	1	10	-	-
Port Divestiture Fund	0	5	7	22	49
Other Ferry and Coastal Services	43	35	32	32	31
Other <sup>1</sup>	5	4	2	1	25
Total Marine	148	136	80	169	143
<b>Rail Mode</b>					
VIA Rail	236	216	200	170	231
Hopper cars	17	19	21	20	18
Grade Crossings	7	7	7	7	7
Other	7	11	8	8	8
Total Rail	267	254	237	206	265
<b>Highway Modes</b>					
Transition Programs <sup>2</sup>	98	486	93	57	17
Highway Agreements	201	152	126	107	68
Infrastructure Program	193	122	71	-	-
Fixed Link in					
Prince Edward Island <sup>3</sup>	13	53	44	46	48
Other	9	10	10	19	20
Total Highway Modes	515	822	345	229	152
<b>Grand total</b>	<b>1,262</b>	<b>1,959</b>	<b>926</b>	<b>645</b>	<b>609</b>

More details are available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).<sup>1</sup> Payments of \$36 million to the Government of Quebec for the transfer of harbours and wharves and \$21.4 million to the Hamilton Harbour Commission for the settlement of a civil litigation.<sup>2</sup> Offset federal programs for the elimination of the *Western Grain Transportation Act*, *Maritime Freight Rate Assistance Act*, *Atlantic Region Freight Assistance Act* programs and the Labrador ferry service buyout in 1997/98.<sup>3</sup> Estimates of funding of transport infrastructure program.<sup>4</sup> Forecast as of January 31, 2001 of full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

to account for the transfer of the BC Ferry debt to the provincial government. In Alberta, the Premier's Task Force on Infrastructure resulted in transportation funding rising by 60 per cent. In the rest of the country, provincial transport expenditures grew by 5.1 per cent. Figure 3-1 illustrates the trends in provincial and local expenses on transport by province/territory.

Since 1995/96, transport spending by provincial and local governments has increased annually by three per cent. The largest increases were in Newfoundland, British Columbia, Prince Edward Island and Alberta. Manitoba and the Northwest Territories had the largest relative declines.

Federal transfers are equivalent to 1.3 per cent of transport spending by local and provincial/territorial governments in 1999/2000. This ratio peaked at 5.4 per cent in 1997/98. In 1999/2000, Newfoundland and the Yukon were the most dependent on federal transfers, which accounted for more than 20 per cent of their spending on transport.

Spending on roads and highways is the most important category of transport-related expenditures for all provinces, although other modes are also significant for some provinces. The proportion for road and highway spending ranged from almost 100 per cent in Prince Edward Island to 66 per cent in the Northwest Territories. Remoteness makes spending on air transportation more significant for the Northwest Territories, where it accounted for 19 per cent of transport spending in 1999/2000. This relative importance of air has varied from one year to another, reaching as high as 45 per cent in 1996/97.

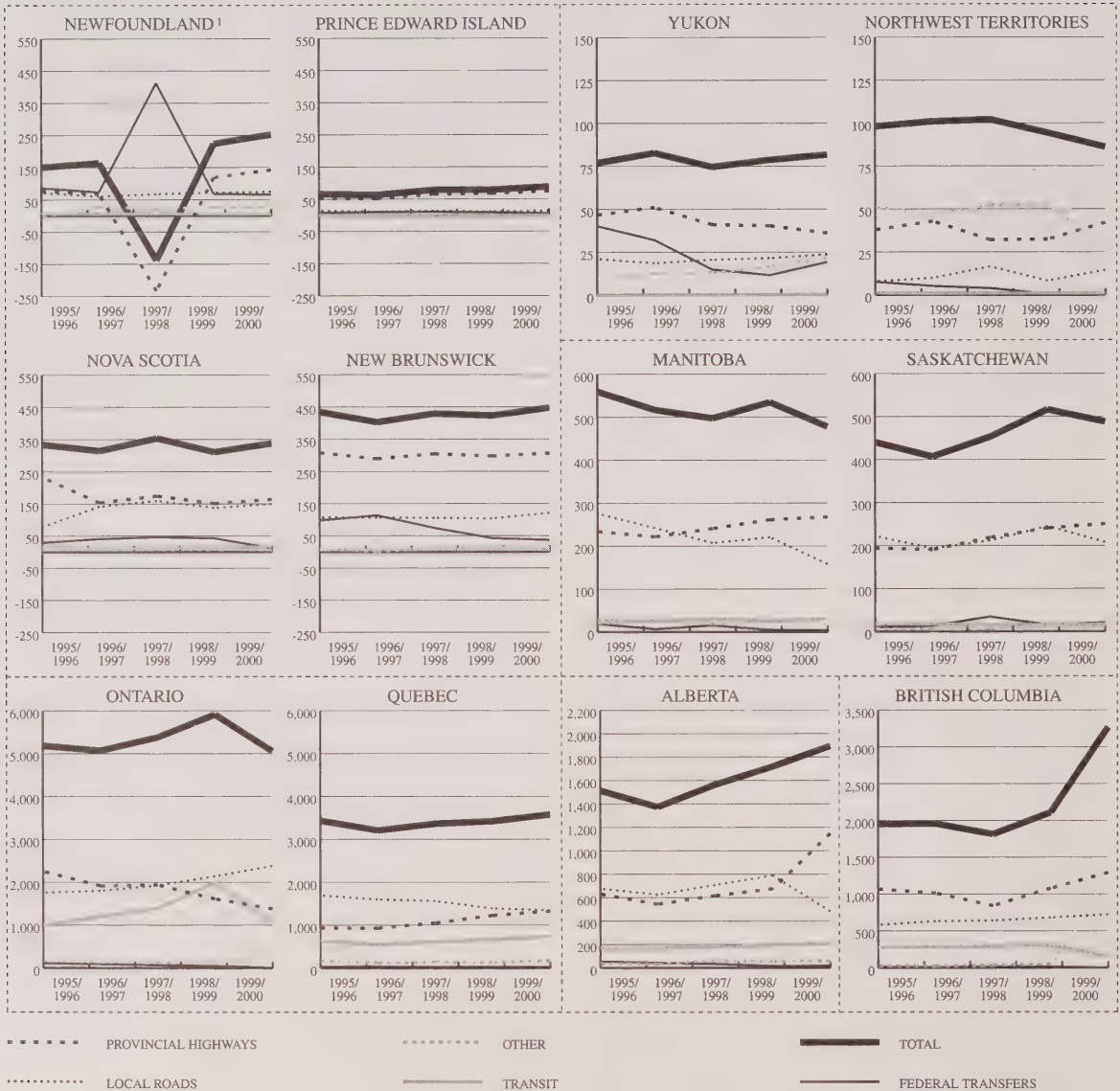
Although transit spending fell by almost \$1 billion in Ontario in 1999/2000, its 21 per cent share of total transport expenditures by all levels of government in the provinces is the largest in Canada. Local governments have replaced provincial governments as the main source of transit system expenditures, accounting for 92 per cent. In the early 1990s, their share of transit spending was 22 per cent. Expenditures on transit are also significant in Quebec, Alberta and British Columbia.

## DISTRIBUTION OF PROVINCIAL/TERRITORIAL AND LOCAL EXPENDITURES BY PROVINCE

In 1999/2000, provincial, territorial and local governments spent \$16 billion on transportation. This was a \$630 million increase, or 4.1 per cent more than in 1998/99. Local expenditures rose by \$128 million (1.7 per cent). Expenditures by the provinces increased by \$502 million (6.4 per cent). However, in Ontario, provincial expenditures dropped by \$1.2 billion, or 44 per cent, mainly as a result of reduced transfers to local governments and transit authorities. A major increase of \$1.2 billion was reported in British Columbia

FIGURE 3-1: PROVINCIAL/TERRITORIAL AND LOCAL TRANSPORT EXPENDITURES BY PROVINCE, 1995/96 TO 1999/2000

(Millions of dollars)



Note: More yearly data are available on Transport Canada's Website at [www.tc.gc.ca](http://www.tc.gc.ca).

1 Includes special transaction in 1997/98 of a one-time payment of \$348 million to the province of Newfoundland for the Labrador ferry services buyout.

Source: A) Provinces/Territories: Provincial/Territorial Departments of Transport; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be under reported. Net expenses by local governments are only netted of transfers reported by provincial governments

B) Local expenditures: Statistics Canada, Public Institutions Division; data are on a calendar year basis

1. (To apply to Local Roads): Roads and streets, parking and snow removal netted of federal and provincial transfers

2. (To apply to transit): Provinces' expenditures and local expenditures netted of estimated transfer from the provinces

3. (To apply to Other): Air, rail, marine and some local expenditures on communication

## TOTAL TRANSPORTATION REVENUES BY LEVEL OF GOVERNMENT

The federal government generates revenues from the use of transportation facilities and services. Revenues from cost recovery initiatives are credited to the federal department's budget, while revenues from other sources are credited to the government's Consolidated Revenue Fund. Both are included in this analysis. Excise fuel taxes collected by the federal and provincial governments, as well as provincial licence and other fees, constitute tax revenues collected from transport users. Table 3-4 details government revenues from transport users from 1996/97 to 2000/01.

**TABLE 3-4: GOVERNMENT REVENUES FROM TRANSPORT USERS, 1996/97 TO 2000/01**

	(Millions of dollars)		1998/ 1999	1999/ 2000	2000/ 2001 <sup>9</sup>
	1996/ 1997	1997/ 1998			
<b>Transport Federal Revenues other than Fuel Taxes</b>					
Air Transportation Tax <sup>1</sup>	737	742	295	3	-
Airports	325	160	267	271	239
Aircraft Services	26	30	28	27	28
Other Air Fees	197	6	10	12	12
Marine Revenues <sup>2</sup>	56	67	67	72	77
Lease of Hopper Cars <sup>3</sup>	-	12	12	13	10
Other fees and recoveries <sup>4</sup>	43	10	20	26	12
<b>Total Credited</b>	<b>1,384</b>	<b>1,027</b>	<b>700</b>	<b>424</b>	<b>378</b>
<b>Other Government Revenues from Transport Users</b>					
<b>Federal Fuel Taxes</b>	<b>4,439</b>	<b>4,625</b>	<b>4,742</b>	<b>4,786</b>	<b>N/A</b>
Non-Transport Use <sup>5,6</sup>	383	400	379	385	N/A
Road Use <sup>6</sup>	3,826	3,989	4,133	4,169	N/A
Other Modes <sup>6</sup>	230	236	231	233	N/A
<b>Provincial/Territorial</b>					
<b>Fuel Taxes</b>	<b>6,399</b>	<b>6,579</b>	<b>6,795</b>	<b>6,973</b>	<b>N/A</b>
Sales Tax Equivalent <sup>6,7</sup>	741	623	557	658	N/A
Net Road Taxes <sup>6</sup>	5,359	5,644	5,967	6,018	N/A
Other Modes <sup>6</sup>	300	313	272	298	N/A
Provincial/Territorial Licences/Fees <sup>8</sup>	2,308	2,309	2,376	2,214	N/A
<b>Total: Tax Revenues from Road Users</b>	<b>11,494</b>	<b>11,942</b>	<b>12,475</b>	<b>12,401</b>	<b>N/A</b>
Total: Tax Revenues from Non-Road Users	529	549	503	531	N/A
<b>Total: Tax Revenues from All Users</b>	<b>12,023</b>	<b>12,491</b>	<b>12,977</b>	<b>12,931</b>	<b>N/A</b>

Note: N/A = Not applicable.

More yearly data are available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

1 Since 1996/97, the Air Transport Tax, formerly netted against Transport Canada's budget has been credited to the Consolidated Revenue Fund.

2 Includes Coast Guard user fees and sales of marine assets credited to the Consolidated Revenue Fund.

3 Credited to Consolidated Revenue Fund.

4 Includes interdepartmental and intradepartmental transfers for services and various regulatory, licensing and administrative fees credited to either Transport Canada or the Consolidated Revenue Fund.

5 Estimated fuel taxes levied public transportation system use.

6 Estimates by Transport Canada.

7 Estimates based on the sales tax that would have applied to provincial fuel prices before the provincial fuel taxes.

8 The amounts shown exclude licence and registration fees dedicated to the Société de l'Assurance Automobile du Québec.

9 Forecast as at January 31, 2001, for full year.

Source: Transport Canada; Fisheries and Oceans Canada; provincial/territorial departments of transportation

In 1999/2000, the most recent year for which budget information is available for all government levels, government revenues collected from transport users through fuel taxes and permit and licence fees generated by the federal and provincial/territorial governments, totalled \$13.4 billion, a slight decline from the previous year. By far, road fuel taxes make up the largest component of tax revenues from transportation, averaging \$9.8 billion or 78 per cent from 1995/96 to 1999/2000. Over that period, road fuel tax revenues showed the highest growth rate (3.5 per cent), whereas other fuel taxes advanced by 0.1 per cent, and licences and fees declined by 1.4 per cent.

In 2000/01, federal government transportation revenues other than fuel taxes are expected to total \$378 million, down \$46 million from 1999/2000. Airport revenues and leases, at \$239 million, are to account for most of this total, while marine fees are to bring in an additional \$77 million. Other federal revenues not credited to transport, such as the revenues from the leases of hopper cars or the sale of port assets, are also reported in Table 3-4.

## OVERVIEW OF EXPENDITURES AND REVENUES BY MODE

This section summarizes consolidated federal expenses and revenues by mode from 1996/97 to 2000/01. In addition, Table 3-5 shows expenditures by the provincial/territorial and local governments, netted of transfers received from other levels of government, from 1996/97 to 2000/2001.

Total government spending on roads has risen at 2.5 per cent a year to reach \$12.5 billion in 1999/2000. Road expenditures now account for 69 per cent of overall spending on transportation. From 1996/97 to 1999/2000, the provincial and federal governments collected more money from road users than all levels of government spent on highways and local streets. A surplus of \$85 million was generated over the period reviewed.

In 1998/99, the strong increase in transit funding came from the Ontario government's large capital subsidies to transit systems. In 1999/2000, spending on transit systems accounted for 12 per cent of all government expenditures on transportation. With the \$1 billion reduction in 1999/2000, spending on transit systems by Ontario is back to its mid-1980s level.



In 1999/2000, the air mode accounted for 2.3 per cent of gross government spending on transportation. This spending has declined by 73 per cent since 1996/97. About 11 per cent of government annual transport spending has been apportioned to the marine mode in 1999/2000. In previous years, total government expenditures in the marine mode have averaged five per cent of total government spending on transportation. The increase is due to the transfer of the BC Ferry debt to the provincial government.

Spending on the rail mode has fallen by 23 per cent since 1996/97, accounting for 1.3 per cent of gross government spending on transportation in 1999/2000. Close to 80 per cent of this spending is related to subsidies to rail passenger services.

In 1999/2000 the federal and provincial governments spent \$2.6 billion on the air, marine and rail modes combined while generating \$0.9 billion in fees and tax revenues from transport users. The remaining \$0.7 billion accounted for 36 per cent of total net expenses by governments on transportation.

The category "Other" in Table 3-5 includes overhead expenses by all levels of government and expenditures related to multimodal activities. Less than four per cent of government transportation spending falls under this category.

**TABLE 3-5: TRANSPORT EXPENDITURE/REVENUES BY MODE AND LEVEL OF GOVERNMENT**

	(Millions of dollars)				
	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001 <sup>1</sup>
<b>Federal O&amp;M<sup>2</sup>, Capital and Subsidies<sup>4</sup></b>					
Air	1,450	1,102	594	356	350
Marine	822	809	691	795	742
Rail	281	267	252	221	280
Road	712	1,014	526	396	317
Other	220	234	234	222	235
<b>Total</b>	<b>3,485</b>	<b>3,426</b>	<b>2,296</b>	<b>1,990</b>	<b>1,924</b>
<b>Provinces/Territorial/Local<sup>8</sup></b>					
Air	96	76	75	62	N/A
Marine	73	92	120	1,179	N/A
Rail	11	2	2	5	N/A
Road	10,915	10,924	11,622	12,120	N/A
Transit	2,294	2,562	3,257	2,231	N/A
Other	274	318	348	455	N/A
<b>Total</b>	<b>13,662</b>	<b>13,974</b>	<b>15,423</b>	<b>16,053</b>	<b>N/A</b>
<b>Total Expenses: All Government Levels</b>					
Air	1,546	1,178	668	418	N/A
Marine	895	901	811	1,974	N/A
Rail	292	269	254	226	N/A
Road	11,626	11,938	12,147	12,516	N/A
Transit	2,294	2,562	3,257	2,231	N/A
Other	494	552	582	677	N/A
<b>Total</b>	<b>17,147</b>	<b>17,399</b>	<b>17,719</b>	<b>18,043</b>	<b>N/A</b>
<b>Government Revenues from Transport Users<sup>6</sup></b>					
Road Users	11,494	11,943	12,475	12,401	N/A
Other Modes	1,886	1,567	1,188	938	N/A
Multimodal	26	8	14	16	N/A
<b>Total</b>	<b>13,407</b>	<b>13,518</b>	<b>13,677</b>	<b>13,356</b>	<b>N/A</b>
<b>Net Transportation Expenses</b>					
Road	133	(5)	(328)	115	N/A
Transit	2,294	2,562	3,257	2,231	N/A
Other Modes	846	781	545	1,680	N/A
Multimodal	467	544	567	661	N/A
<b>Total</b>	<b>3,741</b>	<b>3,881</b>	<b>4,041</b>	<b>4,687</b>	<b>N/A</b>

Note: More details are available on Transport Canada's Web site ([www.tc.gc.ca](http://www.tc.gc.ca)).

<sup>1</sup> Forecast as at January 31, 2000.

<sup>2</sup> O&M: Operating and Maintenance.

Source:

A Transport Canada: Main Estimates and Public Accounts of the federal departments concerned.

B Provincial/territorial departments of transportation; Transport Canada. Many provinces have moved to unconditional grants to local governments. For this reason, transportation transfers may be underreported. Net expenses by local governments are only netted against transfers reported by provincial governments. Statistics Canada, Public Institutions Division: data are on a calendar year basis.

C Transport Canada: Fisheries and Oceans Canada; provincial/territorial departments of transportation.

# TRANSPORTATION AND SAFETY

# 4

*The safety record of Canada's transportation system  
continues to show improvement.*

One of Transport Canada's most important tasks is to ensure that Canada's transportation system is safe. This is done by the development of practical and effective safety programs and regulations, and by ensuring compliance with these regulations and related technical standards. To achieve this objective, Transport Canada regulates and co-ordinates safety-related matters in several areas, including: aeronautics and airports; air and marine navigation; marine shipping facilities; commercial shipping; new motor vehicle standards; railway facilities and operations; bridges and canals connecting provinces with each other or with the United States; and transportation of dangerous goods.

Transport Canada works closely with all stakeholders — including the federal, provincial, territorial and municipal governments, industry, and non-governmental organizations — to help ensure that Canada's transportation system is among the world's safest. The Transportation Safety Board and provincial governments, in particular, play important roles in maintaining the safety of the system nationwide. In addition, Transport Canada collaborates with foreign governments, agencies and organizations on several international safety initiatives.

Using reports of rail, marine and aviation accidents and incidents made to the Transportation Safety Board as its primary source of information, this chapter describes recent trends in occurrence statistics for all modes of transport, as well as for the transportation of dangerous goods.

## TRANSPORTATION OCCURRENCES

The year 2000 was a success for transportation safety, with declines in the number of accidents in the aviation, marine and rail sectors. The number of road casualty collisions, however, was up slightly from the record low

level achieved in the previous reporting year. In fact, the 321 reported accidents involving Canadian registered aircraft and the 449 reported shipping accidents represent the lowest numbers of accidents reported in these modes in the last 25 years. All transportation modes continue to reflect a continuing downward trend in the number of accidents. Accidents involving dangerous goods, however, have been increasing over the last few years.

Unfortunately, the downward trend in the number of accidents in 2000 is tempered somewhat by the numbers of fatalities reported. While aviation and rail fatalities were down in 2000 (by three per cent and 18 per cent, respectively, compared with 1999 levels), there was a slight increase in the number of fatalities in marine (seven per cent). Road transportation showed a one per cent increase in 1999.

As they do not take into account the specifics of each mode, however, these comparisons can be misleading because they fail to reflect the level of activity or exposure to risk associated with each means of transportation.

The year 2000 also saw increases in the number of aviation and marine incidents reported to the Transportation Safety Board, up 3 per cent and 36 per cent respectively over 1999 levels. The number of reported rail incidents was 32 per cent lower than the previous five-year average.

Table 4-1 presents the most recent statistics on transportation occurrences by mode, including comparisons with the previous five-year averages.

Taking into account the level of activity in each mode, the accident rates for 2000 continue to exhibit a general downward trend, with decreases in each of the aviation, rail and marine modes (reliable activity measures for motor vehicles were not available).

**TABLE 4-1: TRANSPORTATION OCCURRENCES BY MODE, 2000  
VERSUS PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999)**

	Aviation	Marine	Rail	Road
Accidents				
2000	321	449	1,062	153,720
Five-year average	363	571	1,180	159,884
Fatalities				
2000	63	31	87	2,969
Five-year average	81	33	111	3,140
Incidents				
2000	726	243	330	N/A
Five-year average	703	166	436	N/A

Road accident statistics relate to 1999 and 1994-1998 which are the most recent statistics available and are based on 1999 Canadian Motor Vehicle Traffic Collision Statistics – TP 3322. Road events include property collisions, which exclude collisions that involve property damage only.

Source: Statistics Canada, based on Transportation Safety Board data.

Table 4-2 presents data on accident rates by mode for the most recent year, as well as the five-year average.

**TABLE 4-2: ACCIDENT RATES IN TRANSPORTATION, 2000 VERSUS  
PREVIOUS FIVE-YEAR AVERAGE (1995 – 1999)**

	Aviation <sup>1</sup>	Marine <sup>2</sup>	Rail <sup>3</sup>	Road
Accidents				
2000	7.5	3.1	13.3	N/A
Five-year average	9.2	3.6	15.1	N/A

<sup>1</sup> Per million flight hours of scheduled registered aircraft.

<sup>2</sup> Per 100,000 registered vessel miles.

<sup>3</sup> Per million train miles.

Source: Transport Canada, based on Statistics Canada data and data from Statistics Canada, *Accident Statistics, 2000* (Catalogue no. 95-02). Ottawa, 2001.

Keeping in mind that each has its own inherent limitations, these aggregate measures of activity provide a point of reference for interpreting the occurrence statistics. For example, in rail, the measure of train-miles captures only that activity that occurs on main-track lines and does not extend to activity on yards, spurs and sidings. Considering that roughly one half of rail occurrences take place on non-main-track areas, this tends to overstate the actual accident rate. Likewise for marine, measures of vessel movements do not directly take into account the

overall distance travelled. Activity is also primarily limited to vessels of greater than 15 gross registered tonnage and excludes fishing vessels. For aviation, accident rates can vary significantly whether measured through flying hours, aircraft movements or licences.

Figure 4-1 shows the number of reportable accidents involving transportation of dangerous goods from 1995 to 2000.

## RAIL

The federal portion of the national railway system has been decreasing steadily since 1996, with 10 per cent less track belonging to carriers falling under federal jurisdiction today than in 1996. The statistics presented in this section include all railways under federal jurisdiction.

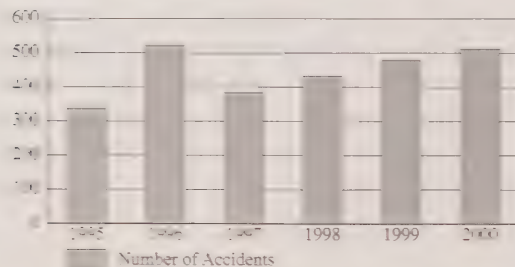
In 2000, there were a total of 1,062 railway accidents reported to the Transportation Safety Board, six per cent below the 1999 total and 10 per cent below the five-year average. This decrease in accidents and an accompanying increase in train-miles results in a lower accident rate in 2000, compared with 1999. The 2000 accident rate decreased to 13.3 accidents per million train-miles from 14.4 in 1999 and was well below the previous five-year average of 15.1. Train-miles for 2000 are based on an estimated 80.1 million, compared with 78.5 million for 1999.

Of the total rail-related accidents reported in 2000, non-main-track train derailments and collisions accounted for the largest portion, with 47 per cent of the total. Crossing accidents followed with 25 per cent, then main-track train derailments and collisions with 12 per cent. Trespasser accidents accounted for seven per cent in 2000, while all other accident types accounted for nine per cent. The non-main-track derailments and collisions mainly involved a single car derailing in a yard at a relatively slow speed and with a low public risk.

In 2000, 38 per cent of the non-main-track derailments and collisions involved single non-dangerous goods cars. Dangerous goods were involved in 23 per cent of the total reported accidents, of which four accidents resulted in the release of a dangerous goods product.

Accidents involving passenger/commuter trains decreased to 61 in 2000, down from 71 in 1999 and 73 for the previous five-year average.

Between April 1999 and July 2000, there were three accidents involving VIA Rail trains and the misalignment of main track switches in non-signalled territory (Thamesville, Ontario, on April 23, 1999; Miramichi, New

**FIGURE 4-1: REPORTABLE ACCIDENTS INVOLVING  
DANGEROUS GOODS, 1995 – 2000**

Source: Transport Canada, Dangerous Goods Accident Information System.



Brunswick, on January 30, 2000; and near Guelph, Ontario, on July 9, 2000). The Thamesville and Guelph accidents occurred on federally regulated main line tracks.

After reviewing the industry's actions to resolve the problem of misaligned main track switches in non-signalled territory, Transport Canada initiated further regulatory action under Section 33 of the *Railway Safety Act* (RSA) in November 2000. This action was issued in the form of an Emergency Directive on Canada's major railways.

A total of 330 rail incidents were reported to the Transportation Safety Board in 2000, down slightly from 333 in 1999 and 436 for the previous five-year average. The largest portion of these incidents (57 per cent) involved cars carrying dangerous goods that leaked a product, but not as a result of an accident.

Table 4-3 summarizes rail accidents reported from 1995 to 2000, including the 1995–1999 average.

**TABLE 4-3: ACCIDENTS IN RAIL TRANSPORTATION, 1995 – 2000**

Year	Number of Accidents	Accident Rate <sup>1</sup>	Fatalities	Serious Injuries
1995	1,276	16.3	120	132
1996	1,305	17.2	117	129
1997	1,116	14.0	109	101
1998	1,075	13.7	101	75
1999	1,129	14.4	106	96
1995–1999 Average	1,180	15.1	111	107
2000	1,062	13.3	87	66

1 Number of accidents per million train-miles.

Source: Transport Canada, based on Transportation Safety Board data

In 2000, there were 87 rail fatalities, down from 106 in 1999 and well below the five-year average of 111. There were also 84 fatal accidents, down 14 per cent from the 1999 total of 98 and below the five-year average of 103. The majority of the fatalities were related to rail grade crossing accidents or accidents involving trespassers.

Table 4-4 shows the number of railway crossing accidents by province from 1995 to 2000, including the 1995–1999 average and Canada-wide totals.

A total of 261 crossing accidents occurred in 2000, which is an eight per cent decrease from the 1999 total of 283 and well below the five-year average of 321. Total fatalities as a result of crossing accidents decreased to 33 in 2000, down from 37 in 1999 and 41 for the five-year average.

Crossing accidents that occurred at public crossings accounted for 85 per cent of the total reported in 2000.

**TABLE 4-4: RAILWAY CROSSING ACCIDENTS BY PROVINCE, 1995 – 2000**

Province	1995	1996	1997	1998	1999	1995–1999 Average	2000
<b>Accidents<sup>1</sup></b>							
Newfoundland/Prince Edward Island/							
Nova Scotia (171)	5	8	5	3	7	5.6	3
New Brunswick (325)	12	6	5	2	5	6.0	3
Quebec (2,547)	58	61	51	48	51	53.8	42
Ontario (5,457)	121	91	75	65	94	89.2	88
Manitoba (3,045)	33	46	30	34	19	32.4	21
Saskatchewan (6,446)	44	49	33	38	30	38.8	31
Alberta (3,759)	66	71	70	54	52	62.6	46
British Columbia (1,084)	40	33	38	29	24	32.8	27
<b>Canada<sup>2</sup> (22,834)</b>	<b>379</b>	<b>365</b>	<b>307</b>	<b>273</b>	<b>283</b>	<b>321.4</b>	<b>261</b>
Fatal Crossing Accidents	39	39	30	38	32	35.6	30
Passenger Train Related Accidents	26	40	30	29	31	31.2	18

1 Figures in brackets denote estimated number of public crossings in each province or grouping of provinces as of January 2001.

2 The Canadian total includes one accident in the Northwest Territories in 1999.

Source: Transport Canada, based on Transportation Safety Board data

Automated crossings accounted for the largest portion, with 54 per cent; however, these generally occurred in areas with relatively high vehicle traffic. The most significant decrease in 2000 was crossing accidents at private crossings, where numbers decreased to 38 in 2000 from 50 in 1999.

Fatal crossing accidents constituted 36 per cent of total fatal accidents in 2000, up from 33 per cent in 1999 and the previous five-year average of 35 per cent. Crossing accidents involving passenger trains declined to 18 from 31 in 1999 and 31.2 for the five-year average.

Table 4-5 summarizes trespasser accidents by province from 1995 to 2000, including the 1995–1999 average and Canada-wide totals.

**TABLE 4-5: RAIL TRESPASSER ACCIDENTS BY PROVINCE, 1995 – 2000**

Province	1995	1996	1997	1998	1999	1995–1999 Average	2000
<b>Accidents</b>							
Newfoundland/Prince Edward Island/							
Nova Scotia	0	4	0	0	0	0.8	0
New Brunswick	6	3	0	0	0	1.8	1
Quebec	27	32	15	12	26	22.4	14
Ontario	41	55	47	36	46	45.0	41
Manitoba	13	1	4	4	1	4.6	1
Saskatchewan	3	3	4	2	3	3.0	2
Alberta	13	8	7	10	10	9.6	6
British Columbia	9	21	21	14	9	14.8	14
<b>Canada</b>	<b>112</b>	<b>127</b>	<b>98</b>	<b>78</b>	<b>95</b>	<b>102.0</b>	<b>79</b>
Fatal Trespasser Accidents	63	67	69	59	61	63.8	53
Passenger Train Related Accidents	23	28	24	25	23	24.6	28

Source: Transport Canada, based on Transportation Safety Board data



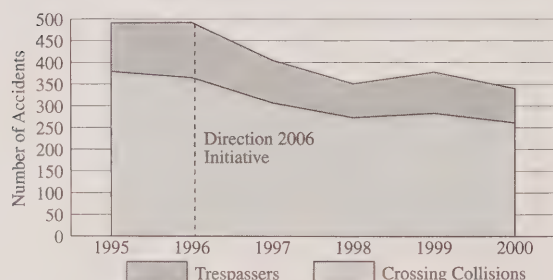
In 2000, the number of trespasser accidents decreased to 79 from 95 in 1999, well below the previous five-year average of 102. The majority of these accidents occurred in Ontario, which had approximately one half the total trespasser accidents reported in 2000. The number of fatal trespasser accidents also declined to 53 from 61 in 1999, again well below the five-year average of 64. Two thirds of all rail-related fatal accidents were the result of trespasser accidents, a consistent ratio during the past five years.

In partnership with stakeholders, Transport Canada has undertaken several initiatives to address safety concerns in these areas.

Transport Canada participates in Direction 2006, a program that aims to reduce grade crossing collisions and trespassing incidents to 50 per cent below 1996 levels by the year 2006. Direction 2006 involves public awareness and education programs; monitoring and enforcement; safety programs; and research to improve safety and awareness of the risks related to grade crossings and trespassing. Public and private railway stakeholders, provincial and municipal governments, law enforcement agencies, safety organizations, and railway companies and their unions are all partners with Transport Canada in the program. In addition, Transport Canada administers a funding program for safety improvements at selected grade crossings, and is a partner with the Railway Association of Canada in the "Operation Lifesaver" public awareness program. The department also has a comprehensive compliance activity related to safety at crossings and trespass areas.

Figure 4-2 illustrates the number of crossing and trespasser accidents from 1995 to 2000. Direction 2006 was established in 1996.

**FIGURE 4-2: CROSSING AND TRESPASSER ACCIDENTS, 1995 – 2000**



Source: Transport Canada, based on Transportation Safety Board data

## ROAD

For motor vehicle traffic collisions, the most recent data available are from 1999 for fatalities, injuries and casualty

collisions. For property damage only (PDO) collisions, the most recent data available are from 1998.

## DOMESTIC OPERATIONS

Over the last several decades, Canada's road safety record has continued to improve steadily. In 1999, a total of 2,969 fatalities resulted from motor vehicle collisions, the second lowest annual total in 44 years (statistics of this nature have been recorded since 1945). Road-related fatalities were up 1.2 per cent from the level in 1998, but 5.5 per cent below the 1994–1998 average.

Table 4-6 illustrates the national number of road-related casualty collisions, fatalities and injuries from 1994 to 1999.

**TABLE 4-6: TOTAL ROAD CASUALTY COLLISIONS, FATALITIES AND INJURIES, 1994 – 1999**

Year	Casualty Collisions	Fatalities	Persons Injured
1994	169,649	3,263	245,110
1995	167,044	3,351	241,935
1996	158,990	3,091	230,890
1997	152,764	3,063	221,349
1998	150,974	2,934	217,754
1994 – 1998 Average	159,884	3,140	231,408
1999	153,720	2,969	222,275
Per cent change 1999/Average	(3.9)	(5.5)	(3.9)
Per cent change 1999/1998	1.8	1.2	2.1

Casualty collisions include all reportable motor vehicle collisions that result in a fatality or injury. The downward progression in casualty collisions was interrupted in 1999, with the national total increasing 1.8 per cent from 1998. Nonetheless, this was still some 3.9 per cent below the five-year average for 1994 to 1998.

Table 4-7 shows the number of road fatalities in Canada classified by the six major users of roads.

**TABLE 4-7: FATALITIES BY CATEGORY OF ROAD USER, 1994 – 1999**

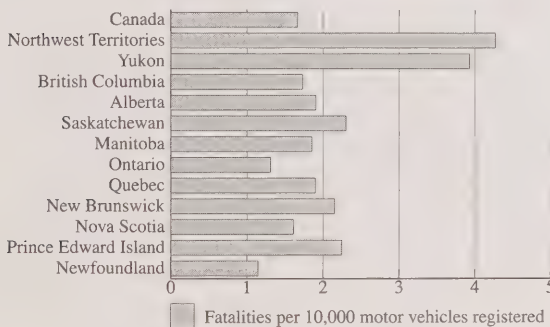
	1994	1995	1996	1997	1998	1994-1998 Average	1999
Drivers	1,626	1,652	1,518	1,540	1,451	1,557	1,539
Passengers	851	920	825	812	716	825	734
Pedestrians	429	416	465	402	402	423	414
Bicyclists	86	64	60	67	77	71	69
Motorcyclists	163	166	128	122	165	149	159
Other	108	133	95	120	123	116	54

The "drivers" category represents the single largest segment of the road user population and also accounts

for the largest share of road fatalities. In 1999, this category of road user accounted for 52 per cent of total road fatalities, while all motor vehicle occupants made up 77 per cent of road user fatalities. The "pedestrians" and "motorcyclists" categories accounted for 14 per cent and five per cent of fatalities, respectively.

Figure 4-3 compares average road fatality rates by jurisdiction for 1997 to 1999. It shows that the highest fatality rates in Canada were in the Northwest Territories and the Yukon, which reflects the relatively low number of vehicles registered in those territories and the more difficult driving conditions. Ontario, with the largest road network and the highest number of vehicle registrations, continued to have one of the lowest fatality rates during this period, with only 1.3 fatalities per 10,000 road motor vehicles registered. Only Newfoundland was lower at 1.1.

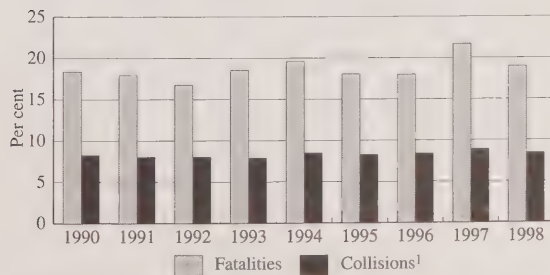
**FIGURE 4-3: THREE-YEAR AVERAGE NUMBER OF FATALITIES BY JURISDICTION, 1997 – 1999**



Source: Canadian Motor Vehicle Traffic Collision Statistics

Figure 4-4 shows the percentage of vehicles involved in collisions with commercial vehicles and the corresponding percentage of fatalities from 1990 to 1998. (Please note that information separated by commercial vehicle is currently only available to 1998.)

**FIGURE 4-4: PERCENTAGE OF ROAD COLLISIONS AND FATALITIES INVOLVING COMMERCIAL VEHICLES, 1990 – 1998**



<sup>1</sup> Vehicles involved in collisions

Source: Transport Canada, Traffic Accident Information Database

During this time, vehicles involved in collisions with commercial vehicles accounted for approximately eight per cent of all vehicles involved in road collisions, yet accounted for roughly 18.7 per cent of all road fatalities. In 1998, there were 557 fatalities resulting from collisions involving commercial vehicles, down from 664 fatalities in 1997.

Table 4-8 provides a breakdown of commercial and other vehicles involved in fatal collisions by type of vehicle from 1993 to 1998, including the 1993–1997 five-year average.

**TABLE 4-8: COMMERCIAL AND OTHER VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998**

Vehicle Type	1993-1997					
	1993	1994	1995	1996	1997	Average 1998
<b>Commercial</b>						
Bus	37	43	31	39	32	36
Trucks greater than 4,536 kg	212	197	163	167	179	184
Tractor-trailers	343	328	346	294	335	329
<b>Total Commercial Vehicles</b>	<b>592</b>	<b>568</b>	<b>540</b>	<b>500</b>	<b>546</b>	<b>549</b>
Other vehicles involved in collisions with commercial vehicles	599	574	533	458	486	530
Total vehicles involved in collisions with commercial vehicles	1,191	1,142	1,073	958	1,032	1,079
All other vehicles involved in collisions	3,933	3,590	3,606	3,438	3,245	3,563
<b>Total: all vehicles</b>	<b>5,124</b>	<b>4,732</b>	<b>4,679</b>	<b>4,396</b>	<b>4,277</b>	<b>4,642</b>

Source: Transport Canada, Traffic Accident Information Database

**TABLE 4-9: VEHICLES INVOLVED IN FATAL COLLISIONS BY VEHICLE TYPE, 1993 – 1998**

Vehicle Type	1993-1997					
	1993	1994	1995	1996	1997	Average 1998
Automobile	2,866	2,605	2,583	2,431	2,276	2,552
Light trucks and vans	1,147	1,083	1,077	1,037	1,059	1,081
Truck:						
Tractor-trailer	343	328	346	294	335	329
Truck greater than 4,536 kg	212	197	163	167	179	184
Other	23	23	25	15	21	21
Bus:						
School	12	16	10	12	8	12
Intercity	1	7	5	7	4	5
Transit	10	11	6	7	9	11
Bus unspecified	14	9	10	13	11	11
Motorcycle <sup>1</sup>	217	164	170	141	125	163
Bicycle	85	91	70	63	74	77
Farm equipment	31	32	36	37	32	34
Snow equipment	56	39	64	50	41	50
Train/Streetcar	19	20	11	16	11	15
Motor home	18	32	24	28	19	24
All-terrain vehicles	10	13	4	8	9	9
Other	60	62	75	70	64	66
<b>Total</b>	<b>5,124</b>	<b>4,732</b>	<b>4,679</b>	<b>4,396</b>	<b>4,277</b>	<b>4,642</b>

<sup>1</sup> Includes mopeds.

Source: Transport Canada, Traffic Accident Information Database

Table 4-9 shows the number of vehicles involved in fatal motor vehicle collisions by type of vehicle from 1993 to 1998, including the 1993–1997 five-year average.

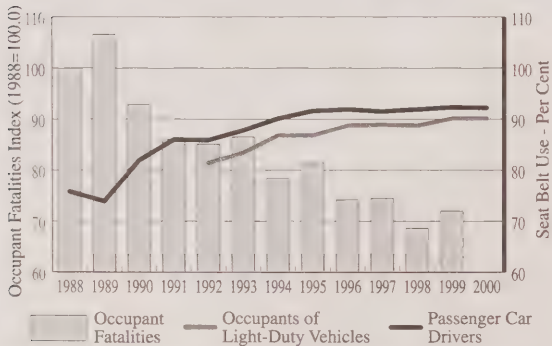
Down slightly from the previous five-year average of 55 per cent, private automobiles accounted for 52 per cent of the vehicles involved in fatal collisions in 1998. Light-duty trucks and vans had the second largest share of fatal collisions by vehicle, with 25 per cent, up from 23 per cent for the 1993–1997 period. The combined categories of truck (tractor-trailer, trucks greater than 4,536 kilograms and other) followed with 11 per cent.

### SEAT BELT USE

Seat belt use in motor vehicles is believed to be the most effective way of reducing fatalities on highways. Under the *Motor Vehicle Safety Act* (MVSA), Transport Canada has required motor vehicle manufacturers to install seat belts in all new passenger cars since January 1, 1971. Beginning in January 1976, the provincial and territorial governments gradually enacted legislation that required the use of seat belts.

Figure 4-5 shows the results of the national seat belt surveys conducted each June since 1988. These surveys determined the rates at which drivers of passenger cars and occupants of light-duty vehicles wore seat belts. The results for the latter category have been collected only since 1992. The figure also shows that occupant fatalities decrease as the use of seat belts increases.

**FIGURE 4-5: NATIONAL SEAT BELT USE COMPARED TO OCCUPANT FATALITIES, 1988 – 2000**



Source: Transport Canada, National Seat Belt Survey; Traffic Accident Information Database

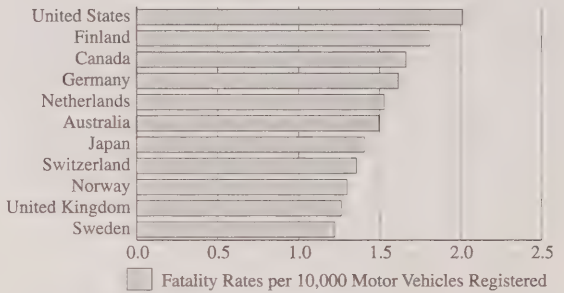
### INTERNATIONAL COMPARISONS

By international standards, Canada ranks as one of the top Organisation for Economic Co-operation and Development (OECD) member countries, in part because

of its continued success in improving motor vehicle safety.

Figure 4-6 shows the average motor vehicle fatality rates among selected OECD countries from 1997 to 1999.

**FIGURE 4-6: AVERAGE MOTOR VEHICLE FATALITY RATES AMONG SELECTED OECD COUNTRIES, 1997 – 1999**



Source: International Road Traffic Accident Database, OECD

One of the indicators of motor vehicle activity and exposure to risk are vehicle ownership rates. Canada's vehicle ownership rate was 59.5 per 100 inhabitants in 1998, compared with the US rate of 76.8, the highest rate among OECD countries. Higher ownership rates in Canada and the United States indicate a greater degree of reliance on this mode of transportation, which correlates with a generally higher exposure to risk for road users.

## MARINE

### OVERVIEW

During the last decade, there has been a downward trend in the number of shipping accidents. On average, accidents have decreased by eight per cent per year since 1990. This trend continued in 2000, with 449 accidents reported to the Transportation Safety Board, which represented a 16 per cent decrease from 1999 and a 21 per cent decrease from the 1995 – 1999 average.

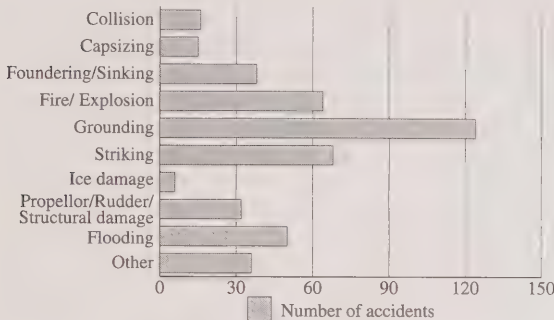
In 2000, as in preceding years, the largest proportion of shipping accidents by type were grounding at 28 per cent, followed by striking at 15 per cent, fire/explosion at 14 per cent and flooding at 11 per cent. These accident types have shown the largest declines in recent years. Increases were noted, however, in the 15 recorded capsizing accidents, compared with six in 1999, and the 38 recorded foundering/sinking accidents, compared with



32 in 1999. Both these types of accidents, however, remained within the range of their five-year averages.

Figure 4-7 shows the number of accidents, by type, in 2000.

**FIGURE 4-7: SHIPPING ACCIDENTS, BY CATEGORY, 2000**



Source: Transport Canada, based on Transportation Safety Board data

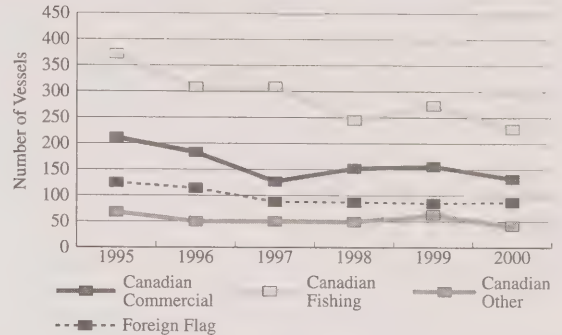
In 2000, 402 Canadian vessels were involved in shipping accidents. As is historically the case, fishing vessels constituted the largest percentage of these, at 57 per cent; the total number of fishing vessels involved, however, was still a 24 per cent decrease compared with the previous five-year average. The most reported accidents by type for Canadian fishing vessels were grounding at 31 per cent, and flooding at 18 per cent. The largest reductions from the five-year averages occurred in instances of flooding and fire/explosion.

Also in 2000, 132 Canadian commercial vessels were involved in shipping accidents, a 20 per cent decrease from the previous five-year average. Some of these vessels pose a greater risk to persons and the environment. For these vessels, there were 22 accidents involving ferries and 15 accidents involving passenger vessels, both of which remained on a par with recent years. There were six accidents involving tanker vessels, which represented approximately one half of the five-year average. The most significant decrease for commercial vessels related to bulk carrier/ore, bulk, oil (OBO) vessels, with 25 accidents in 2000, compared with the five-year average of 37. Striking accidents, at 28 per cent, and grounding accidents, at 24 per cent, respectively, were the most prevalent accident types reported by Canadian commercial vessels.

Service, offshore, research and other Canadian vessel accidents numbered 42 in 2000, a decline of 33 per cent from 1999 and a reduction of 25 per cent from the five-year average. Service vessel involvement was predominant and represented one half of the 2000 figure.

Figure 4-8 shows the number of vessels involved in shipping accidents by vessel flag and vessel category from 1995 to 2000.

**FIGURE 4-8: VESSELS INVOLVED IN SHIPPING ACCIDENTS BY VESSEL FLAG AND VESSEL CATEGORY, 1995 – 2000**



Source: Transport Canada, based on Transportation Safety Board data

In 2000, 87 foreign flag vessels were involved in shipping accidents, down 13 per cent from the previous five-year average. Most foreign vessel categories remained within range of their respective five-year averages. The exception was bulk carrier/ore, bulk, oil (OBO) vessels, which showed a 28 per cent reduction. Once again, these vessels represented the largest percentage of shipping accidents involving foreign vessels, at 39 per cent, followed by cargo/container vessels at 22 per cent, and fishing vessels at 13 per cent. Nearly one third of foreign-flag vessel accidents in 2000 were striking accidents, while almost one quarter were grounding accidents.

In 2000, there were also 76 reported accidents aboard ship, up 10 per cent from 1999 and 27 per cent from the five-year average. Of these 76 accidents, fishing vessels accounted for 45 per cent, commercial vessels for 37 per cent, and service vessels for 15 per cent.

There were 21 fatal marine accidents in 2000 with 31 related fatalities, down slightly from the five-year average of 23 fatal accidents and 33 fatalities. Of the 21 fatal accidents, 13 fatalities resulted from fishing vessel occurrences. One third of the fatal accidents resulted in multiple casualties. Approximately one half (15) of the total fatalities were the result of accidents aboard ship.

Twenty-eight vessels were lost in 2000, a decrease of 52 per cent from the five-year average. All but one vessel was less than 150 gross registered tonnage. Fishing vessels accounted for the most losses at 23. Of the 20 vessels for which year built was available, the average vessel age was 18 years.



In 2000, there were 243 shipping incidents, which is 46 per cent above the five-year average. The increase was largely related to incidents involving engine/rudder/propeller problems, which represented 42 per cent of the incidents, while close-quarters situations accounted for about 25 per cent. Of the 323 vessels involved, fishing and ferry/passenger vessel categories reported 20 per cent each.

There were 87 marine injuries in 2000, an increase of 10 per cent compared with the five-year average. Of these, fully 81 per cent involved accidents aboard ship.

Table 4-10 shows the marine occurrences by type from 1995 to 2000, as well as the 1995–1999 five-year averages.

**TABLE 4-10: MARINE OCCURRENCES, 1995 – 2000**

	1995	1996	1997	1998	1999	1995-1999 Average	2000
Shipping Accidents	695	605	533	490	533	571	449
Accidents Aboard Ship	56	58	59	59	69	60	76
Fatalities	39	25	24	48	29	33	31
Vessels Lost	82	60	60	49	45	59	28
Incidents	199	132	155	167	179	166	243
Injuries	82	71	83	80	80	79	87

Source: Transport Canada, based on Transportation Safety Board data

## REGIONAL OVERVIEW

For occurrence reporting purposes, the Transportation Safety Board defines six regional boundaries<sup>1</sup>. Accidents that occur in foreign waters involving Canadian vessels are also included in the regular statistical occurrence reporting. For the purposes of this report, the Maritimes and Newfoundland regions have been combined and called the Atlantic Region.

In 2000, the Western Region reported 166 shipping accidents. This is a 17 per cent reduction from the five-year average and can be attributed to the decrease in the number of fishing vessel accidents. Five vessels were lost in the region, which represented about one fifth of the five-year average. The number of accidents aboard ship rose to 32, compared with the five-year average of 15. Incidents also increased to 109, more than double the five-year average of 49. These 109 incidents represented 45 per cent of the national total.

In the Central Region, there were 45 shipping accidents in 2000, a 37 per cent reduction from the five-year average. Vessels in the large commercial categories were largely responsible. Six accidents occurred aboard ship, and one vessel was lost. These figures correspond with previous years, but the number

of incidents in the region, at 32, showed an increase over the five-year average of 21.

Reported shipping accidents in the Laurentian Region numbered 61, down 19 per cent from the five-year average. The seven accidents aboard ship, three vessels lost and 48 incidents all remained comparable with their respective five-year averages.

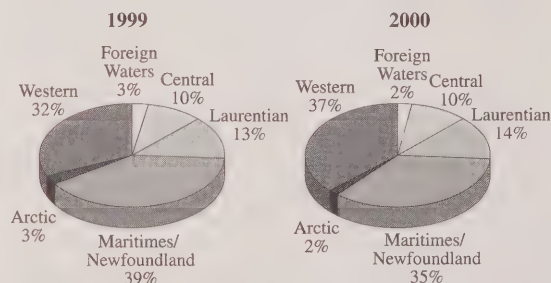
There were 158 reported shipping accidents in the Maritimes/Newfoundland regions, also below the five-year average of 200. The 30 accidents aboard ship denoted a 25 per cent increase, however, above the five-year average. The 17 vessels lost were 39 per cent below the five-year average. Marine incidents at 49, however, showed a 14 per cent increase over the five-year average.

In the Arctic Region, eight shipping accidents and two marine incidents were proportional with the five-year averages. There were two vessels lost in 2000, the first losses since 1994. No accidents aboard ship were reported.

Canadian vessels reported 11 shipping accidents in foreign waters, a slight decline from the five-year average of 15. The one accident aboard ship and three marine incidents reported were comparable with their five-year averages. No vessels were reported lost.

Figures 4-9 compares shipping accidents in 2000 with shipping accidents in 1999, according to Transportation Safety Board regions.

**FIGURE 4-9: SHIPPING ACCIDENTS BY TRANSPORTATION SAFETY BOARD REGION, 1999 VERSUS 2000**



Source: Transport Canada, based on Transportation Safety Board data

## COMMERCIAL SHIPPING ACTIVITY

For commercial shipping activity in 2000, the estimated number of trips for Canadian commercial vessels (based on forecast traffic data) increased by nearly one per cent from 1999, whereas the number of these vessels involved

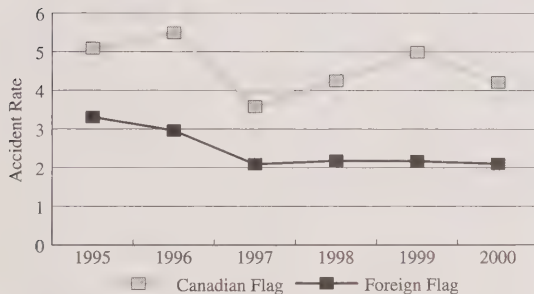
<sup>1</sup> A description of the regional boundaries is found in the annual publication entitled "Transportation Safety Board Statistics Summary, Marine Occurrences."

in shipping accidents decreased 15 per cent. The calculated number of foreign flag commercial vessel trips also increased by one per cent, while the number of these vessels involved in accidents remained equivalent.

When comparing the resulting accident rates produced over the same period for Canadian-flag and foreign-flag vessels, it is important to recognize that the numerous tugs and barges operating daily are counted as Canadian commercial vessels, while foreign-flag vessels consist mainly of larger vessels, such as tankers, bulk carriers and container vessels. This incongruity generates the lower accident rate shown for foreign-flag vessels and a seemingly better level of safety.

Figure 4-10 compares the Canadian and foreign-flag commercial vessel accident rates from 1995 to 2000.

**FIGURE 4-10: CANADIAN VERSUS FOREIGN FLAG COMMERCIAL VESSEL ACCIDENT RATE, 1995 – 2000**



Note: The accident rate is based on the number of commercial vessels involved in shipping accidents per 1,000 trips in domestic and international trade.

Source: Transport Canada, based on Transportation Safety Board data

## PORT STATE CONTROL

Canada is signatory to two Memoranda of Understanding (MOU) on Port State Control: the Paris MOU, which includes 18 European countries and Canada; and the Tokyo MOU, which includes 18 Asia-Pacific countries, including Canada. Under the Paris MOU, members are required to obtain an inspection rate of 25 per cent of vessels entering the members' ports. Under the Tokyo MOU, members are working toward a regional percentage of individual vessels of 75 per cent of vessels entering the region's member ports.

Under these MOU in 2000, preliminary data indicated that there were 1,070 inspections carried out in Canada on vessels from 55 different flags of registry. Of the vessels inspected, 55 per cent were found to have defects. Of these, 18 per cent were serious enough to require the vessels to be detained. The offences under

which most detentions were issued included lifesaving equipment, firefighting equipment and structural defects. The majority of vessels inspected were bulk carriers, at 44 per cent, 13 per cent of which were detained. The average age of detained vessels was 17.4 years.

## RECREATIONAL BOATING

According to the Canadian Red Cross National Drowning Report, drownings from recreational boating in Canada in 1998 (the most current year for which data is available) totalled 120. This figure represented a 13 per cent decrease from the previous year and a 15 per cent decrease from the five-year average. The majority of drownings (48 per cent) were the result of capsizing accidents. As in previous years, the largest percentage of recreational boating drownings in 1998 occurred in fishing (43 per cent). The 29 drownings as a result of power boating showed a decline from the 1997 total of 43.

Ontario reported the largest percentage of recreational boating drownings, with 28 per cent, followed by British Columbia with 21 per cent and the Prairies with 20 per cent. For the second consecutive year, there were no recreational boating drownings in the Northwest Territories or the Yukon in 1998.

There were 15 non-drowning boating fatalities in 1998, nearly equivalent to the 16 recorded in 1997. Of these, 60 per cent involved collision/trauma, while the remaining 40 per cent were the result of immersion hypothermia. In 1998, the majority of the fatalities for both these incident types occurred in British Columbia, which reported 6, while Ontario reported 5.

## AVIATION

This section summarizes reported aviation accidents involving Canadian-registered aircraft and reported incidents involving both Canadian and foreign-registered aircraft occurring in Canada. It does not include occurrences involving ultralights and advanced ultralights.

In 2000, there were 321 accidents involving Canadian-registered aircraft, down six per cent from the 1999 total of 341, and 12 per cent lower than the five-year average of 363. The 2000 total represents the lowest annual number of aviation accidents involving Canadian-registered aircraft in the last 25 years.

Table 4-11 shows the number of accidents and fatal accidents involving Canadian-registered aircraft by type of aircraft from 1995 to 2000.

**TABLE 4-11: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT, 1995 – 2000**

Type of aircraft	1995	1996	1997	1998	1999	1995-1999 Average	2000
Accidents							
Aeroplanes Involved	315	274	295	316	287	297	259
Airliners	7	4	8	14	6	8	9
Commuters	19	12	14	10	13	14	5
Air Taxi/Aerial Work Aircraft	134	106	120	128	89	115	65
Other Commercial Air Services	0	0	0	0	8	2	0
Private/Corporate/State	155	152	153	164	171	159	180
Helicopters Involved	68	56	56	57	45	56	53
Other Aircraft <sup>1</sup>	12	12	10	17	15	13	12
Total <sup>2</sup>	390	342	356	386	341	363	321
Fatal Accidents							
Aeroplanes Involved	44	34	29	24	28	32	25
Airlines	1	1	0	0	1	1	1
Commuters	2	1	0	1	2	1	1
Air Taxi/Aerial Work Aircraft	21	12	11	9	6	12	5
Other Commercial Air Services	0	0	0	0	0	0	0
Private/Corporate/State	20	20	18	14	19	18	18
Helicopters Involved	11	7	8	6	4	7	10
Other Aircraft <sup>1</sup>	0	3	0	2	4	2	1
Total <sup>2</sup>	52	44	36	31	34	39	36

1 Includes gliders, balloons and gyrocopters.

2 The number of aircraft involved may not add to the number of accidents, as some accidents involve multiple aircraft.

Source: Transport Canada, based on Transportation Safety Board data

The number of accidents for most aircraft types has declined significantly over this six-year period, most notably in the category of air taxi/aerial work. In 1996, Transport Canada established the Safety of Air Taxi Operations (SATOPS) Task Force to review the safety of air taxi operations. Recommendations made by the Task Force in its 1998 report continue to be implemented, with the objective of increasing the safety of this type of operation.

Private/corporate/state aircraft accounted for 56 per cent of the total number of accidents in 2000, while air taxi/aerial work aircraft operations accounted for 20 per cent. Over the last 10 years, the number of accidents involving private/corporate/state aircraft has been decreasing. That said, accidents involving these types of aircraft have consistently represented approximately one half of all accidents involving Canadian-registered aircraft. These aircraft also accounted for 50 per cent of the total of fatal accidents in 2000.

Airliners are aircraft used by a Canadian air operator in an air transport service or in aerial work involving sightseeing operations with a maximum take-off weight of more than 8,618 kilograms (19,000 pounds) or aircraft for which a Canadian type certificate has been issued authorizing the transport of 20 or more passengers. In 2000, Canadian-registered airliners were involved in nine accidents, up from the previous year's total of six and the 1995 – 1999 average of eight. One of these was a fatal

accident. In March 2000, a Douglas DC-3 was landing on an ice strip at Ennadai Lake, Nunavut. The aircraft touched down and then climbed steeply. The gear was seen retracting, and the aircraft then cartwheeled to the ground. Both crew members suffered fatal injuries.

Regional or large commuter aircraft are those used by a Canadian air operator in an air transport service or in aerial work involving sightseeing operations that are multi-engined aircraft with a maximum take-off weight of 8,618 kilograms (19,000 pounds) or less and a seating configuration, excluding pilot seats, of 10 to 19 inclusive. They also include turbo-jet-powered aircraft that have a maximum zero fuel weight of 22,680 kilograms (50,000 pounds) or less and for which a Canadian type certificate has been issued authorizing the transport of not more than 19 passengers.

In 2000, there were five accidents involving regional or large commuter aircraft, down significantly from the previous year's 13 and well below the five-year average of 14. There was one fatal accident involving a Canadian-registered commuter aircraft, resulting in two fatalities. A Grumman G-159 aircraft was on a scheduled courier flight from Moncton, New Brunswick, to Montreal, Quebec, when the crew requested and received an altitude block due to turbulence and icing. The aircraft then exited Canadian airspace without incident. Shortly after entering Boston airspace, the aircraft was observed on radar, descending at approximately 12,000 feet per minute before disappearing from the radar monitor. The wreckage was located in a wooded area near the town of Linneus, Maine. Both crew members were fatally injured.

Most commercial air accidents involve aircraft in the air taxi/aerial work categories. During 2000, there were 65 accidents involving aircraft in these types of operations, down considerably from the 1999 total of 89 and down 43 per cent from the five-year average of 115. Three fatal accidents were reported in 2000 during air taxi operations, resulting in seven fatalities. Two fatal accidents occurred during aerial work operations, resulting in four fatalities.

The overall accident rate in 2000 was 7.5 accidents per 100,000 hours flown, below both the accident rate for 1999 and the five-year average.

The regional breakdown of accidents shows significant fluctuation when comparing this year over last. The Atlantic and the Pacific regions saw the most dramatic increase in accidents in 2000, while the total number of accidents in the Ontario and the Prairie and Northern regions decreased significantly. Accidents in the Atlantic Region rose from 16 in 1999 to 29 in 2000 (an increase of 81 per cent) and were well above the five-year Atlantic



Region average of 19. The Pacific Region reported 68 accidents in 2000 compared with 40 in 1999, a 70 per cent increase that accounts for 21 per cent of the total number of accidents. Accidents in the Quebec Region also increased, from 46 in 1999 to 55 in 2000. Offsetting these increases were the declines in the Ontario Region and the Prairie and Northern Region, both of which experienced a 30 per cent decrease in the number of accidents during 2000, compared with 1999.

Table 4-12 summarizes air accidents by region over the last six years, while Table 4-13 shows the corresponding number of air fatalities by region.

**TABLE 4-12: ACCIDENTS INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000**

Transport Canada Region	1995	1996	1997	1998	1999	1995-1999 Average	2000
<b>Accidents</b>							
Atlantic	22	18	20	20	16	19	29
Quebec	78	39	60	41	46	53	55
Ontario	74	72	84	105	106	88	74
Prairie and Northern	130	122	108	133	124	123	87
Pacific	72	83	72	70	40	67	68
Outside Canada	14	8	12	17	9	12	8
<b>Total</b>	<b>390</b>	<b>342</b>	<b>356</b>	<b>386</b>	<b>341</b>	<b>363</b>	<b>321</b>

Note: The number of aircraft involved may not add to the number of accidents as some accidents involve multiple aircraft.

Source: Transport Canada, based on Transportation Safety Board data

**TABLE 4-13: FATALITIES INVOLVING CANADIAN-REGISTERED AIRCRAFT BY REGION, 1995 – 2000**

Transport Canada Region	1995	1996	1997	1998	1999	1995-1999 Average	2000
<b>Fatalities</b>							
Atlantic	6	6	2	5	1	4	7
Quebec	9	12	18	27	9	15	8
Ontario	31	12	8	9	14	15	4
Prairie and Northern	26	13	17	20	17	19	15
Pacific	32	20	22	12	24	22	18
Outside Canada	3	8	10	12	0	7	11
<b>Total</b>	<b>107</b>	<b>71</b>	<b>77</b>	<b>85</b>	<b>65</b>	<b>81</b>	<b>63</b>

Note: The number of aircraft involved may not add to the number of accidents as some accidents involve multiple aircraft.

Source: Transport Canada, based on Transportation Safety Board data

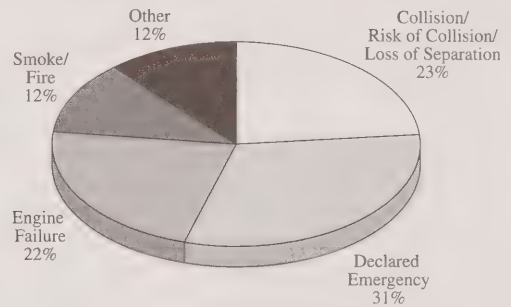
In 2000, air fatalities decreased slightly to 63 from 65 in 1999, and remained considerably below the 1995 – 1999 average of 81. For the second year in a row, the Pacific Region recorded the highest number of fatalities, with 18, followed by the Prairie and Northern Region with 17, and Quebec with 8. Along with the marked increase in accidents in the Atlantic Region, the number of fatalities also increased substantially, from one in 1999 to seven in 2000. The number of fatalities dropped by 71 per cent in the Ontario Region, down from 14 in 1999 to four in 2000.

There were 726 reportable incidents involving either a Canadian or foreign-registered aircraft in 2000, an

increase of three per cent over 1999 levels and above the 1995–1999 average of 703. In 2000, the most frequent incident types were declared emergencies, with 31 per cent; collision/risk of collision/loss of separation, with 23 per cent; and engine failure, with 22 per cent.

Figure 4-11 illustrates reportable incidents for all aircraft in 2000.

**FIGURE 4-11: REPORTABLE INCIDENTS OF ALL AIRCRAFT, 2000**



Source: Transport Canada, based on Transportation Safety Board data

## INTERNATIONAL COMPARISONS

Table 4-14 compares the percentage of fatal air accidents involving airliner and commuter aircraft in Canada and the United States from 1995 to 2000.

**TABLE 4-14: FATAL AIR ACCIDENTS INVOLVING AIRLINER AND COMMUTER AIRCRAFT, CANADA AND US, 1995 – 2000**

	1995-1999 Average						
	1995	1996	1997	1998	1999	Average	2000
<b>Canada</b>							
Accidents	26	17	22	24	19	22	14
Fatal Accidents	3	2	0	1	3	2	2
Fatal Accidents/ Accidents (per cent)	11.5	11.8	0	4.2	15.8	8.7	14.3
<b>US</b>							
Accidents	48	49	66	56	64	55	66
Fatal Accidents	5	6	9	1	6	5	4
Fatal Accidents/ Accidents (per cent)	10.4	12.2	13.6	1.8	9.4	9.5	6.1

Note: Figures pertain to airliner and commuter aircraft only i.e. aircraft with 10 or more seats.

Source: Transport Canada, based on Transportation Safety Board data and US National Transportation Safety Board

Because each country classifies and records its occurrence data differently — due to fundamental differences in the domestic air network and infrastructure of each country — comparing Canadian and US accident data is difficult. Canada's air transportation network is largely linear in nature, extending the entire breadth of the



country. The US network, on the other hand, uses a highly developed hub and spoke network that fans out in all directions. Both countries, however, are members of international panels and working groups whose goals are to establish a common taxonomy and to standardize aviation safety related information. Work from such collaborative efforts should make comparisons and understanding of international safety records much easier.

## TRANSPORTATION OF DANGEROUS GOODS

Over 27 million dangerous goods shipments are transported across Canada each year. Most of these include goods that directly influence and improve the lifestyle that Canadians have come to expect and enjoy. The Transportation of Dangerous Goods (TDG) program enhances public safety during the transportation of goods that can threaten public safety when involved in an accidental release.

If they are severe enough to meet the reporting requirements defined in the TDG Regulations, TDG accidents are called "reportable." It is important to note that very few TDG accidents are caused by the dangerous goods themselves. In 2000, there was one reportable TDG accident directly caused by dangerous goods. One injury resulted from this accident.

Table 4-15 compares reportable accidents involving dangerous goods by mode and phase of transport from 1995 to 2000. "In-transit" accidents include those that occurred during actual transport, while "not-in-transit" accidents are those that took place at facilities where the goods were prepared for transport or stored in the course of transport.

**TABLE 4-15: REPORTABLE DANGEROUS GOODS ACCIDENTS BY MODE AND PHASE OF TRANSPORT, 1995 – 2000**

Year	----- In transit -----				Not in transit	Total
	Road	Rail	Air	Marine <sup>1</sup>		
1995	109	19	3	0	205	336
1996	239	35	9	1	237	521
1997	166	16	6	1	194	383
1998 <sup>2</sup>	179	13	4	0	239	435
1999 <sup>2</sup>	201	19	3	0	295	518
1995-1999						
Average	159	23	3	1	210	395
2000 <sup>3</sup>	234	25	3	3	246	511

- 1 The TDG program does not cover dangerous goods transported in bulk on ships or by pipeline.  
 2 Revised figures.  
 3 A fraction of the 2000 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

In 2000, there were 511 reportable dangerous goods accidents. As has historically been the case, many of these accidents occurred in warehouses while the goods were being handled before loading or after unloading. From 1991 to 2000, more dangerous goods accidents occurred at the handling stage than during transportation.

Table 4-16 summarizes deaths and injuries caused by dangerous goods at reportable accidents that involved dangerous goods. It also shows injuries by level of severity. Two deaths and 42 injuries were caused by dangerous goods in 2000.

**TABLE 4-16: DEATHS AND INJURIES CAUSED BY DANGEROUS GOODS AT REPORTABLE ACCIDENTS, 1995 – 2000**

Year	Deaths due to Dangerous Goods	----- Injuries due to Dangerous Goods -----			Totals
		Major	Moderate	Minor	
1995	0	3	58 <sup>1</sup>	2	63
1996	1	2	10	16	28
1997 <sup>2</sup>	3	15	39	6	60
1998	2	1	36	12	49
1999 <sup>2</sup>	2	11	16	12	39
Average	2	6	32	10	48
2000 <sup>3</sup>	2	4	23	15	42

- 1 31 employees were exposed to a carbon disulphide release in Ottawa, Ontario.

- 2 Revised figures.

- 3 A fraction of the 2000 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

Table 4-17 shows the total number of deaths and injuries that occurred at reportable accidents involving dangerous goods. In most cases, the deaths and injuries were caused by the accident itself (e.g. a collision), not by the goods.

**TABLE 4-17: TOTAL DEATHS AND INJURIES AT REPORTABLE DANGEROUS GOODS ACCIDENTS, 1995 – 2000**

Year	Deaths All causes	----- Injuries -----			Totals
		Major	Moderate	Minor	
1995	7	27	66 <sup>1</sup>	13	106
1996	9	16	37	23	76
1997	15	50	73	11	134 <sup>2</sup>
1998 <sup>3</sup>	13	38	56	15	109
1999	28 <sup>3</sup>	84 <sup>3</sup>	143 <sup>4</sup>	19	246
Average	14	43	75	16	134
2000 <sup>6</sup>	20	44	46	25	115

- 1 31 employees were exposed to a carbon disulphide release in Ottawa, Ontario.

- 2 27 passengers injured in one bus-truck collision in Fox Creek, Alberta.

- 3 7 deaths and 45 injuries were due to a multiple highway vehicle collision in Windsor, Ontario.

- 4 98 passengers were injured in a train collision with three hopper railway vehicles in Thamesford, Ontario.

- 5 Revised figures.

- 6 A fraction of the 2000 accident data is based on estimates.

Source: Transport Canada, Dangerous Goods Accident Information System

In Tables 4-16 and 4-17, "minor" injuries refer to those that require first-aid treatment, "moderate" injuries involve emergency hospital treatment, and "major" injuries require overnight hospitalization.

# TRANSPORTATION — ENERGY AND ENVIRONMENT

# 5

*A sustainable transportation system is a system that meets today's needs for access and economic growth without compromising the ability of future generations to meet their own needs.*

This chapter discusses energy demand, fuel prices and the main environmental impacts related to transportation activity. It also examines transportation trends and the environmental pressures these trends are exerting on the sector.

Transport Canada took part in a number of key sustainable development initiatives throughout 2000. This chapter highlights these initiatives, and looks at other transportation-related sustainable development activities taking place across Canada.

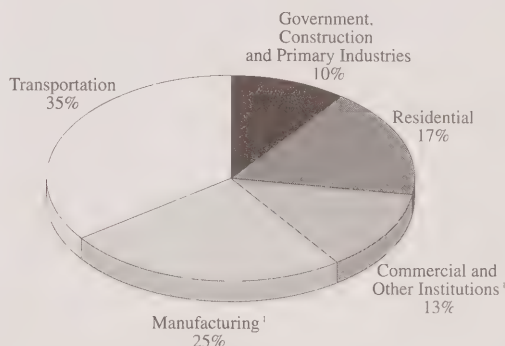
## ENERGY

### ENERGY USE

Total energy consumption in Canada was 7,108 petajoules in 1999, a two per cent increase over 1998. The transportation sector remains the single largest energy user in Canada, accounting for 2,484 petajoules, or 35 per cent of total domestic energy use, in 1999. This was a 2.5 per cent increase over 1998. The manufacturing sector is the second largest user, at 25 per cent of total consumption, followed by the residential and commercial sectors, at 17 per cent and 13 per cent, respectively. These manufacturing and commercial figures exclude any energy consumed by these sectors for transportation activities, as estimated by Transport Canada.

As for the lesser sectors, mining accounted for 4.3 per cent of total energy use, agriculture for 3.2 per cent, public administration for 1.8 per cent, construction for 0.7 per cent and forestry for 0.2 per cent. Figure 5-1 shows the distribution of energy use in the Canadian economy in 1999.

**FIGURE 5-1: ENERGY USE IN THE CANADIAN ECONOMY, 1999**



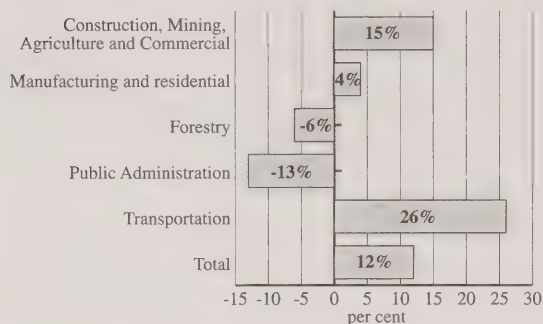
<sup>1</sup> Net of transportation activities.

Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

Between 1990 and 1999, total energy consumption in Canada increased by 12 per cent overall. During this period, energy demand grew fastest in the transportation sector, by 26 per cent, and rose in the construction, mining, agricultural and commercial sectors by 15 per cent. Over the same period, energy demand increased by only four per cent in the manufacturing and residential sectors, and actually decreased in the forestry and public administration sectors, by six per cent and 13 per cent, respectively. Figure 5-2 shows energy consumption growth by sector over the period 1990 to 1999.

While transportation accounts for 35 per cent of total energy use, it also represents 77 per cent of all sales of refined petroleum products when those sales are measured in terms of energy content (petajoules) rather than volume (litres). Agriculture, manufacturing and the residential sector account for another 14 per cent, while

**FIGURE 5-2: GROWTH IN ENERGY USE BY SECTOR, 1990 – 1999**

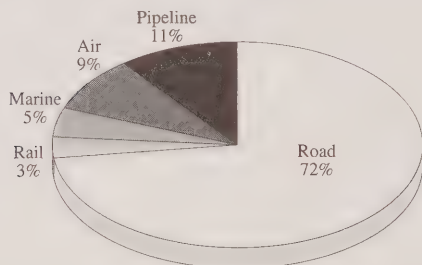


Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

mining, forestry, construction and the commercial sectors consumed the remaining nine per cent.

Within the transportation sector, roads account for 72 per cent of total energy consumption, followed by pipelines at 11 per cent, aviation at nine per cent, marine at five per cent and rail at three per cent. Those shares differ somewhat when only petroleum products are considered, since most of the energy consumed by pipelines is from natural gas. In this case, road transport accounts for 81 per cent of transportation petroleum consumption, while pipelines represent only 0.04 per cent. The share of other modes are not significantly affected. Figure 5-3 shows energy use by the different transportation modes in 1999.

**FIGURE 5-3: ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1999**

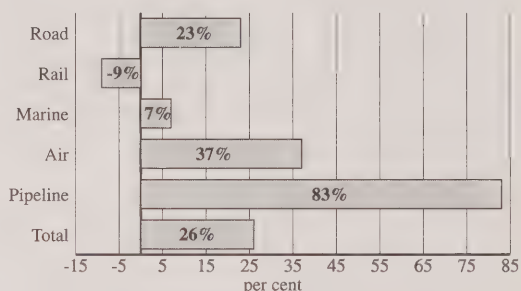


Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

The 26 per cent growth in transportation energy consumption between 1990 and 1999 was not distributed evenly by mode. For example, energy use in pipelines

increased by 83 per cent, reflecting the tremendous increase in that sector's output (67 per cent). The aviation sector, at 37 per cent, had the second largest increase, reflecting increased activity levels. At the other end of the spectrum, rail fuel consumption declined by nine per cent, mostly because of major gains in energy efficiency. Figure 5-4 compares the different levels of growth in energy consumption by the transportation modes over the period 1990 to 1999.

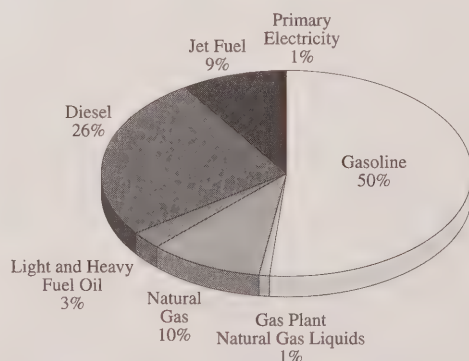
**FIGURE 5-4: GROWTH IN ENERGY USE IN THE TRANSPORTATION SECTOR BY MODE, 1990 – 1999**



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

As Figure 5-5 shows, half the energy consumption of the transportation sector is in the form of motor and aviation gasoline. Diesel (road, rail and marine) is the second largest type of consumption, at 26 per cent of the total, followed by natural gas and jet fuel at 10 and nine per cent, respectively.

**FIGURE 5-5: ENERGY USE IN THE TRANSPORTATION SECTOR BY SOURCE, 1999**

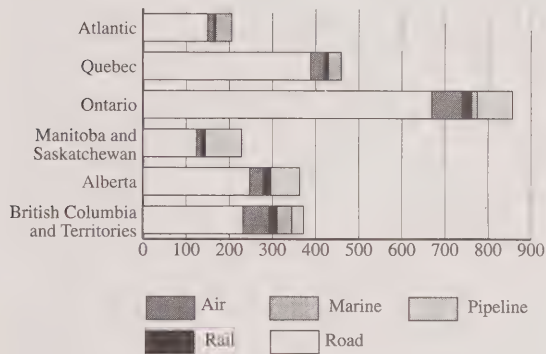


Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003



As Figure 5-6 indicates, Ontario is by far the largest consumer, with 857 petajoules in 1999, or 34 per cent of the Canadian total. Quebec is the second largest consumer, with 459 petajoules (19 per cent), followed by British Columbia with 372 petajoules (15 per cent) and Alberta with 363 petajoules (14.6 per cent).

**FIGURE 5-6: TRANSPORTATION ENERGY PURCHASES BY REGION IN PETAJOULES, 1999**



Source: Transport Canada, based on Statistics Canada's Quarterly Report on Energy Supply-Demand, Cat. 57-003

Manitoba and Saskatchewan represented four per cent and five per cent of domestic consumption, respectively, for a combined total of 228 petajoules. The Atlantic Region represented 8.3 per cent of the domestic total, for a combined 205 petajoules of transportation energy. This consumption is divided among Nova Scotia (3.3 per cent), New Brunswick (2.8 per cent), Newfoundland (1.7 per cent) and Prince Edward Island (0.4 per cent). The Northwest Territories accounted for 0.15 per cent of transportation energy demand, followed by the Yukon territory (0.13 per cent) and Nunavut (0.05 per cent).

Figure 5-6 presents transportation energy purchases by Canadian region in 1999.

Finally, preliminary data for 2000 indicate that high fuel prices may have had a dampening impact on consumer demand. Sales of motor gasoline at the pump increased by only 0.05 per cent between 1999 and 2000, compared with an average increase of 1.64 per cent per year between 1990 and 1999. On the other hand, commercial use of fuel, which is not very sensitive to price variations in the short term, is showing more robust increases. Sales of jet fuel increased by 2.25 per cent in 2000 while total sales of diesel (including diesel used outside the transportation sector) rose by 5.6 per cent.

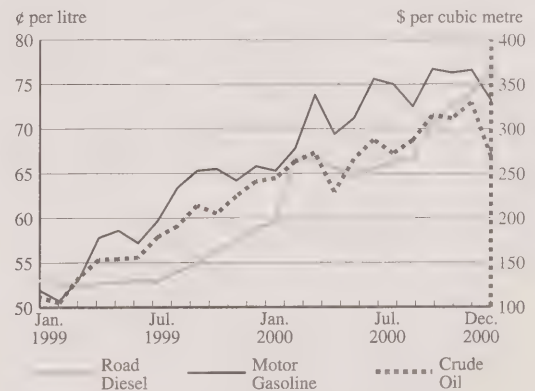
## FUEL PRICES

In 1999 and 2000, the price of energy increased sharply, affecting all sectors of the economy. It was felt more acutely in energy-intensive industries, including transportation. These increases were not limited to Canada, however, as they were the direct result of repeated increases in the world price of crude oil.

On a monthly basis, the price of crude oil in Canada more than tripled between February 1999 and November 2000, from \$105.28 per cubic metre to \$329.37. (The price of crude oil in Canada is represented by the price of Canadian Par in Edmonton.) Apart from a brief drop in April 2000, this increase was almost continuous. Over the same period, the retail price of motor gasoline increased by 51 per cent, from 50.7 to 76.6 cents per litre, while the retail price of diesel increased by 40 per cent, from 52.7 to 74.0 cents per litre. The increases in gasoline and diesel prices were lower because some of the components of fuel are not affected by the price of crude oil. In December, prices started to ease off, with crude oil dropping to \$268.52 per cubic metre, while gasoline fell to 73.2 cents per litre. Only diesel continued its ascent, averaging 76.2 cents per litre in December 2000. Figure 5-7 is a snapshot of what has happened to fuel prices since the beginning of 1999.

**FIGURE 5-7: RETAIL PRICES OF ROAD FUELS VERSUS CRUDE OIL**

Average Monthly Prices, January 1999 to December 2000



Source: Statistics Canada, CANSIM, Series E13042, E13125 and E13225.

The price of fuels include federal excise taxes as well as provincial motive fuel taxes whose values, in cents per litre, are preset and do not increase with the price of crude oil. Federal taxes are currently set at 10 cents per litre for motor gasoline, 11 cents for (leaded) aviation gasoline



including diesel. Provincial fuel taxes currently average 13.3 cents per litre for both diesel and gasoline. As long as these nominal rates are kept constant, the price of fuel to Canadian users cannot grow as fast as the price of crude oil. Conversely, reductions in the price of crude oil do not usually bring proportional reductions in the price of transportation fuels.

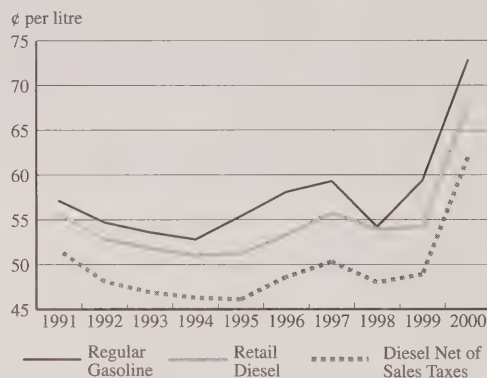
Other fuel-specific supply and demand factors also come into play in the relative growth of various fuel prices. For example, the steep jump in diesel prices that occurred in early 2000, from 59.5 cents in January to 67.0 cents per litre in February, was due not only to the increased cost of crude oil, but also to a colder than anticipated winter on the East Coast of North America

Given that diesel oil and light fuel oil #2, used for home heating, have exactly the same energy content (38.68 megajoules per litre), both fuels are produced from the same stocks. Thus, an increase in demand for one fuel normally boosts the price of both. A colder than anticipated winter diverts production from diesel to heating oil to meet increased heating demand. This reduces the stock of diesel fuel available and, thus, increases its selling price. Therefore, sudden but temporary increases in diesel prices during winter months are common.

The problem was compounded during the winter of 1999 – 2000 by unusually low stocks at refineries. Producers did not expect the high crude oil prices of 1999 to be carried over in 2000; furthermore, they operated under a mild winter scenario. They had therefore maintained their stocks of fuel produced at high cost at minimum levels to avoid large inventories of pricey fuel in the spring when fuel oil prices fell, as they normally do. Consequently, when shortages in heating oil started to loom, they had to resume production at even higher petroleum prices, which in turn led to still higher diesel and heating oil prices.

Figure 5-8 presents annual average prices for road fuels and the price of road diesel net of federal and provincial sales taxes. This “net” diesel price is presented because most of the diesel sold in Canada for road use is purchased by commercial operators in the trucking, bus and transit industries. And any fuel purchased for commercial purposes, irrespective of the relative size of the buyer's operations, is exempted from sales taxes (federal excise and provincial/territorial motive fuel taxes remain applicable, however). This means that sales taxes are either not paid at all at the point of purchase or, if paid, are later refunded. Larger operators may negotiate discounts for large volume purchases, further reducing the average price paid for diesel.

**FIGURE 5-8: ANNUAL PRICE OF ROAD GASOLINE AND DIESEL, 1991 – 2000**



Source: Statistics Canada, CANSIM, Series E13125 and E13225; Transport Canada

Figure 5-8 also shows that the 1999 price increases were merely reversals of the price declines of 1998. For example, regular gasoline sold, on average, for 59.4 cents per litre in 1999, compared with 59.3 cents per litre in 1997. The retail price of diesel, averaging 54.3 cents per litre in 1999, was still below the 55.8 cents per litre recorded in 1997. As for the cost to commercial users, the 48.9 cents per litre was still 1.4 cents per litre below the average 1997 price. Between 1999 and 2000, the price of retail gasoline increased by 22.6 per cent, while the cost of commercial diesel rose by 26.7 per cent. This cost was six cents per litre, or 8.9 per cent below the posted retail price, reflecting the fact that diesel is less costly to commercial buyers than to private consumers.

Figure 5-9 presents the average price of rail diesel and aviation jet (turbo) fuel for the 1991–1999 period (data for 2000 is not yet available). These are not officially posted

**FIGURE 5-9: PRICE OF RAIL DIESEL AND JET FUEL, 1991 – 1999**



Source: Statistics Canada, Canadian Civil Aviation, Cat. 51-206 and Rail in Canada, Cat. 52-216

prices but, rather, the average cost of fuel paid by airlines and railways.

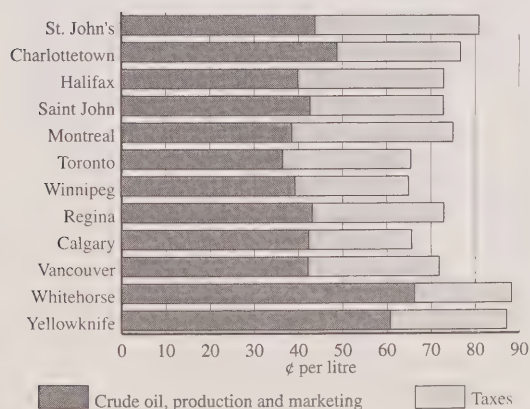
Most fuel prices fell in 1998, but in the case of rail diesel and jet fuel, prices fell by 12 per cent and 15 per cent respectively, compared with 8.6 per cent for motor gasoline and 4.6 per cent for commercial road diesel. The price of jet fuel went up by five per cent in 1999, while the price of rail diesel fell by another one per cent. This additional decline of the price of rail diesel in 1999 may be explained by hedging strategies used by railways, i.e. the pre-contracting of fuel purchases in 1998 when general expectations were for a further decline in oil prices. But hedging allows only for short-term protection against sudden price increases. Prices in 2000 should more accurately reflect higher petroleum costs.

The analysis of fuel prices by mode could not be carried out for marine transportation due to data limitations.

Figure 5-10 presents the retail price of motor gasoline for major cities across Canada for the last week of 2000. The highest prices were in Whitehorse and Yellowknife, at 88.2 and 87.1 cents per litre, respectively. The lowest prices were in Winnipeg and Toronto, at 64.9 and 65.4 cents per litre, respectively. Total taxes were the lowest in Whitehorse (22 cents per litre) and Calgary (23.3 cents per litre). St. John's and Montreal had the highest taxes, at 37.1 and 36.5 cents per litre, respectively. The tax figure for Montreal includes an "urban tax" of 1.5 cents per litre that does not apply to the rest of Quebec. The only other cities to have such a tax are Vancouver, at four cents per litre, and Victoria (not shown), at 2.5 cents per litre.

**FIGURE 5-10: RETAIL PRICE OF MOTOR GASOLINE BY CITY**

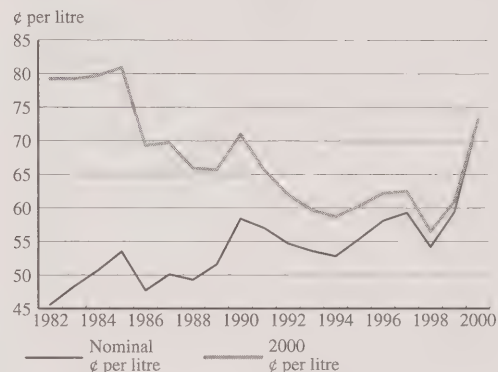
Week of December 28, 2000



Source: M. J. Ervin & Associates

It is important to view these recent increases in an historical perspective. Figure 5-11 shows the evolution of the price of gasoline in both nominal and constant cents per litre. The nominal price went from 45.6 cents per litre in 1982 to an all time high of 73.2 cents per litre in 2000. In constant dollars terms, however, the 1982 price was equivalent to a 2000 value of 79.2 cents per litre. The same can be said for all other transportation fuels.

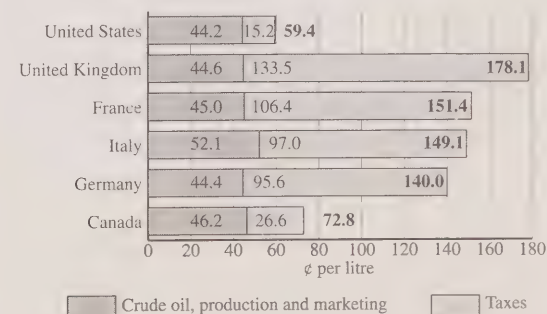
**FIGURE 5-11: ANNUAL PRICE OF MOTOR GASOLINE (REGULAR UNLEADED), NOMINAL VERSUS REAL PRICE**



Source: Statistics Canada, CANSIM, Series E13125 and P100000; Transport Canada

As Figure 5-12 shows, fuel prices in Canada — as represented by gasoline prices — are much lower than prices in selected European countries but slightly higher than in the United States. While prices before taxes are of the same order of magnitude in the six countries presented, taxes differ strongly between Europe and North America. Fuel and sales taxes are about 75 per cent higher in Canada than in the United States but bear no comparison with taxes levied in the four European countries presented.

**FIGURE 5-12: INTERNATIONAL PRICE OF MOTOR GASOLINE, AVERAGE FOR 2000**



Source: Statistics Canada, CANSIM, Series E13125, E13250 and E13260.

## TRANSPORTATION'S ENVIRONMENTAL IMPACT

An increase in transportation energy use generated from increases in the level of transportation activity leads to an increase in emissions arising from the combustion of refined petroleum, which makes up almost all transport fuels.

Transportation activity has three major environmental impacts in terms of emissions. First, it is responsible for emissions of active compounds (greenhouse gases) into the troposphere (the lowest layer of the atmosphere), where they trap heat reflected from the surface of the planet. This process elevates global temperatures and thus changes the earth's climate. Second, it results in emissions of compounds that thin the stratospheric ozone layer and thereby cause damaging infiltration of ultraviolet radiation. Third, it results in the production of transport-related organic pollutants that affect biological systems.

Transport's effect on climate change arises mostly from the increase of greenhouse gases. The greenhouse gas of greatest concern is carbon dioxide (CO<sub>2</sub>), which is responsible for about two thirds of anthropogenic, or human-induced, global warming.

Among major sources of greenhouse gas emissions in Canada, transportation is the single largest. As Figure 5-13 shows, in 1998, greenhouse gas emissions from transportation energy use were about 157 megatonnes of CO<sub>2</sub> equivalent, or about

34.8 per cent of total greenhouse gas emissions from total secondary energy use.<sup>1</sup>

In 1998, road transportation accounted for more than 77 per cent of transportation greenhouse gas emissions, while aviation accounted for 10.2 per cent and marine and rail together less than 10 per cent.

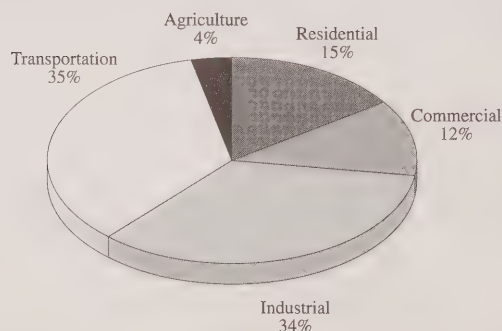
However, environmental impact from transportation activity is not limited to the use of energy. Although transportation provides many economic and social benefits, the movement of people and goods can have other significant environmental consequences. Environmental impacts of transportation include air, water and noise pollution, and the use and alteration of land and other natural resources. A range of transportation activities contributes to these other environmental pressures. These include the construction of infrastructure; operation and maintenance activities, with particular emphasis on winter maintenance; the production, operation, maintenance and disposal of vehicles; and the distribution of fuel.

## TRENDS IN TRANSPORT — PRESSURE POINTS

As the population and economy grow, so too does the demand for transportation. Between 1995 and 2000, Canada's economy grew at a rate of about three per cent per year. Population increases, along with a rise in the number of Canadians travelling, are leading to ever-increasing levels of passenger transportation activity, particularly on the road and in the air. Similarly, growth in domestic and international trade and changes in freight activity patterns are leading to significant increases in freight transportation activity. Overall, freight transport activities are expected to increase by 60 per cent between 1990 and 2020, with the greatest share of the growth projected to be handled by the air and trucking sectors.<sup>2</sup>

Under such a scenario, total transportation energy demand in Canada could rise by more than 50 per cent from 1990 to 2020,<sup>3</sup> with major increases in the demand for gasoline, diesel and aviation fuels leading the way. The modes with the largest expected growth — private automobiles, trucking and aviation — have the greatest impact on the environment, primarily due to air emissions and land use.

**FIGURE 5-13: TRANSPORTATION GREENHOUSE GASES, 1998**



Source: Natural Resources Canada, *Efficiency Trends in Canada 1990 to 1998*, October 2000

1 In 1998, transportation emissions accounted for a smaller share (23 per cent) of total greenhouse gas emissions from all sources of energy (primary energy), which include emissions from final end use, non-combustion uses of energy, electricity generation, and oil and gas production.

2 *Canada's Energy Outlook 1996-2020*. Natural Resources Canada, 1997.

3 *Ibid.*



To overcome these challenges, or pressure points, three major issues must be addressed: climate change, air quality, and sustainability in the transportation sector. A sustainable transportation system is a system that meets today's needs for access and economic growth without compromising the ability of future generations to meet their own needs. Under the foreseeable transportation trends, and assuming a growing use of energy in other economic sectors, emissions would continue to increase, contributing to global climate change and the decline of air quality. Such a scenario is not sustainable; it would contribute to changing the average temperatures and rainfall patterns around the world, which in turn would have negative impacts that threaten to create an irreversible impact for future generations.

Transportation is only one component of global climate change. Even if all transportation systems were sustainable, global warming and air quality concerns could continue.

Sustainability is a broader issue than global climate change and air quality. A sustainable transportation system balances short- and long-term needs for the environment, economic efficiency, and safety.

The following sections briefly review what Canada is currently doing to meet the climate change and air quality challenges as well as the broader issue of sustainable transportation.

## CANADA'S CLIMATE CHANGE AGENDA

In December 1997, Canada and other developed countries negotiated the Kyoto Protocol to the United Nations Framework Convention on Climate Change. The Protocol commits Canada to reducing its greenhouse gas emissions to six per cent below 1990 levels during the five-year period of 2008 to 2012. If current trends continue, however, greenhouse gas emissions from transportation are expected to exceed 1990 levels by 32 per cent by 2010 and 53 per cent by 2020.

In response to the Kyoto Protocol, and as part of a national process to develop measures to address climate change, Canada established 16 issue tables, including one on transportation. The issue tables brought 450 experts from industry, academia, non-governmental organizations and municipalities, and federal, provincial and territorial governments to the discussion. The process was open, inclusive and comprehensive. It advanced understanding of the issues and of potential

solutions. The Transportation Table completed an Options Paper in November 1999, which assessed over 100 potential measures to reduce emissions from transportation.

The two-year national climate change process produced Canada's National Implementation Strategy on Climate Change, released in October 2000. As part of this strategy, Canada's federal, provincial and territorial governments have agreed to develop a series of national business plans outlining concrete actions that they will take in all sectors of the economy to respond to climate change — individually, in partnership and collectively. These business plans will cover a three-year planning horizon and be updated annually. The ministers of Energy and the Environment released the first national business plan for the period 2001 – 2003 in October 2000.

The Government of Canada's contribution to the first national business plan was announced on October 6, 2000, in the Action Plan 2000 on Climate Change. This comprehensive package of measures includes a commitment to spend up to \$500 million over the next five years on new measures to reduce greenhouse gas emissions. This builds upon the \$625 million announced in the 2000 federal budget for climate-related initiatives.

The five new transportation programs included in the Action Plan 2000 focus on initiatives that can produce cost-effective greenhouse gas reductions in 2010; offer clean air benefits for urban centres; have minimal competitiveness implications; have good public acceptance; support the take-up of new technologies; and improve the efficiency of the transportation system.

The five transportation-related components of the Action Plan 2000 are described in the Action on Transportation box.

### ACTION ON TRANSPORTATION

The transportation sector component of the Action Plan 2000 is based on five elements:

- Fuel efficiency: Launch negotiations to achieve new vehicle fuel efficiency targets by 2010.
- New fuels: Increase the supply and use of ethanol produced from biomass such as plant fibre, corn and other grains.
- Fuel-cell vehicles: Develop refuelling infrastructure for fuel-cell vehicles that emit low or zero emissions.
- Freight transportation: Encourage efficiencies and technologies in aviation, rail, marine and trucking industries.
- Urban transportation: Demonstrate best urban transportation technologies and strategies to reduce greenhouse gas emissions.

Source: Action Plan, [www.climatechange.gc.ca](http://www.climatechange.gc.ca)



Provinces and territories approved the business plan of the National Implementation Strategy in October 2000. Some jurisdictions identified their actions for inclusion in this first integrated plan of committed and proposed federal, provincial and territorial actions. Other jurisdictions, such as Quebec, have adopted the themes and objectives, in whole or in part, and identified their own business or action plans, which are appended to the national plan. Examples of actions approved and under way include British Columbia's SkyTrain expansion, Alberta's further adoption of intelligent transportation systems (ITS) measures, Saskatchewan's short-line Railway Advisory Program, Newfoundland's Fleet Replacement and Maintenance initiative, and Nova Scotia's action to increase awareness of transportation options and encourage behavioural change. Provinces and territories are currently pursuing further work to develop longer-term action and implementation plans that will provide sustained reductions in transportation emissions. Some municipalities also have their own diverse action plans.

## CLEAN AIR INITIATIVES

Another significant sustainable transportation challenge facing Canada is the air pollution generated by transportation activities.

In December 2000, an agreement to significantly reduce smog-causing pollutants was brought into force by the governments of Canada and the United States. The agreement, entitled the Ozone Annex to the 1991 Canada–United States Air Quality Agreement, was signed by the Honourable David Anderson, Canada's Minister of the Environment, and Frank Loy, US Under-Secretary of State for Global Affairs. This agreement commits both governments to significantly reduce the creation of smog causing pollutants — nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) — in Ontario and Quebec and the northeastern and mid-western United States.

The Ozone Annex agreement builds on an earlier success in reducing acid rain under the 1991 Canada–United States Air Quality Agreement.

The Ozone Annex commits the United States to a NO<sub>x</sub> emission reduction program of 36 per cent year-round by 2010 in the US transboundary region. To achieve this goal, the United States expects to reduce summertime emissions of fossil fuel power production and major industrial sources by more than 70 per cent. Further reductions in NO<sub>x</sub> and VOCs are to come from existing US vehicles and fuel quality rules and standards for other sources of VOCs, such as consumer and commercial products.

## FEDERAL PARTNERSHIP WITH CANADIAN MUNICIPALITIES

Building more sustainable Canadian communities was brought a step closer to reality following the signing of two agreements on March 31, 2000, between the Federation of Canadian Municipalities (FCM) and the federal government.

The agreements established two multi-million dollar funds to encourage investment in best practice and innovative municipal environmental projects. The creation of the \$100-million Green Municipal Investment Fund (GMIF) and the \$25-million Green Municipal Enabling Fund (GMEF) was hailed by the FCM as unprecedented recognition of the critical role municipal governments must play in sustainable development.

The Green Municipal Investment Fund is a revolving fund that provides interest-bearing loans as well as loan guarantees for up to 15 per cent of eligible costs and, in exceptional cases, up to 25 per cent. The five-year Green Municipal Enabling Fund will provide grants to municipal governments or their project partners for up to 50 per cent of the eligible costs.

These programs will improve the environmental efficiency and cost-effectiveness of municipal infrastructure by:

- improving the energy efficiency of municipal office buildings and water/wastewater treatment centres;
- supporting renewable energy projects;
- increasing the percentage of waste diverted from landfills; and
- supporting conversion of transit vehicles to operate on more sustainable fuels.

The agreement also commits Canada to aggressive annual caps by 2007 of 39 kilotons of NO<sub>x</sub> (as NO<sub>2</sub>) emissions from fossil fuel power plants in central and southern Ontario and five kilotons of NO<sub>x</sub> in southern Quebec. In addition, Canada is to put in place regulatory standards for vehicles and fuels, aligned with those in the United States. It is estimated that the total NO<sub>x</sub> reductions in the Canadian transboundary region will be 44 per cent year-round by 2010.

Both Canada and the United States are to report once every two years on progress in reaching their targets and, in 2004, revisit the agreement to see if further reductions are required. Both countries are to analyse further options to reduce emissions from significant sources such as transportation, manufacturing and electricity. The goal is to implement cost-effective emission reductions through energy efficiency, renewable energy, cleaner fuel and alternative technology. Both countries are also to examine whether air quality issues along the British Columbia–Washington border should be jointly addressed under the Ozone Annex.

Environment Canada initiated a vehicle emissions inspection program in 1986. Since then, the department has organized voluntary vehicle emissions clinics in

conjunction with various regional organizations in both the public and private sector. In 2000, Transport Canada once again partnered with Environment Canada to conduct Vehicle Emission Inspection Clinics across Canada. The primary objective of the clinics is to raise awareness of on-road vehicles' contribution to smog-causing emissions.

At the provincial level, Ontario's Clean Drive Program carries out emissions testing, and repair has become a mandatory requirement for vehicle registration and transfer of ownership. In its first year, the program achieved fuel savings equal to more than 120,000 fill-ups for a mid-size car, resulting in an estimated 6.7 per cent reduction in the emission of smog-causing pollutants.

## SUSTAINABLE TRANSPORTATION STRATEGY

In 1995, the Government of Canada passed legislation requiring each federal department to prepare a sustainable development strategy through the lens of its own mandate. The legislation also established a Commissioner of the Environment and Sustainable Development within the Office of the Auditor General of Canada to monitor and audit the implementation of these strategies.

### CANADIAN CITIES: FUNDING SUSTAINABLE TRANSPORTATION

The Metropolitan Transportation Agency was created by the Province of Quebec in 1996. It is a provincial agency that co-ordinates the planning and funding of public transportation in the Montreal region. The agency receives revenue from a 1.5 cent per litre dedicated gasoline tax collected within the region and a vehicle licence surcharge of \$30 per vehicle in the region.

In 1999, the Province of Alberta approved an arrangement for funding transportation capital in Calgary and Edmonton, which provides funding of five cents per litre of provincial fuel taxes collected in those regions. Calgary and Edmonton have integrated governance structures that allow them to plan and implement sustainable transportation policies on a comprehensive basis.

In 1999, the Greater Vancouver Regional District and the Province of British Columbia created the Greater Vancouver Transportation Authority (TransLink) to provide transit funding and co-ordination of major roads, transportation demand management, and the motor vehicle emission testing system known locally as AirCare. TransLink has access to a number of transportation-related revenue sources, including fares and a share of the existing provincial fuel tax (initially six cents per litre and rising to 10 cents per litre by 2005). The agency also has the authority to implement vehicle charges, parking taxes and tolls on facilities it finances.

Transport Canada's first strategy was tabled in Parliament in December 1997. The strategy made important progress in a number of areas, such as public education and outreach, climate change and environmental management. Transport Canada's second Sustainable Development Strategy, which will be tabled in Parliament in early 2001, builds on the first strategy. The strategy is Transport Canada's plan for making decisions encompassing sustainability considerations in the transportation sector, in partnership with key stakeholders, and is a step in the journey toward a more sustainable transportation system in Canada. The development of the strategy benefited from the views of a national advisory group and a national stakeholder consultation process that included over 200 stakeholders in eight cities across Canada.

Transport Canada's 2001 – 2003 strategy has 7 challenges and 29 commitments for action and associated targets and performance indicators. The seven challenges are:

1. Improving education and awareness of sustainable transportation
2. Developing tools for better decisions
3. Promoting adoption of sustainable transportation technology
4. Improving environmental management for Transport Canada's operations and lands
5. Reducing air emissions
6. Reducing pollution of water
7. Promoting efficient transportation

To measure the success of the sustainable development strategy, Transport Canada has defined performance measures for its challenges and commitments.

The federal government is also working with municipalities to address sustainability. Municipalities' sustainable transportation actions vary in scope, in part because of the degree of differences in transportation responsibilities delegated to them by provincial governments, but also because of their relative size. Larger municipalities generally have more scope for action than smaller municipalities, especially because of their involvement in public transportation system operations.

The Federation of Canadian Municipalities (FCM), the national voice of municipal governments, provides guidance to municipal decision makers on a range of issues, including transportation and environmental protection.

### MILLENNIUM TRANSPORTATION CONFERENCE

On June 11 and 12, 2000, the Honourable David M. Collenette, Minister of Transport, hosted the Millennium Transportation Conference in Toronto. The Conference brought together more than 200 key Canadian transportation decision-makers and prominent public- and private-sector stakeholders to exchange perspectives on the challenges facing Canada's transportation sector and discuss how best to shape a renewed transportation agenda for Canada in the years to come.

The Conference was centred on the overall theme of Meeting the Global Challenge and structured around the following sub-themes:

- Canada and the Global Challenge
- Safety and the Global Challenge
- Sustainability and Globalization
- New Technologies and Globalization
- Public Policy Challenges and Globalization

The FCM is advocating and urging municipal governments to adopt policies that favour public transit over private automobiles; review their transportation policies with a view to shifting to environmentally friendly modes of transportation; and ensure that infrastructure required to support alternative modes of transportation, such as walking and cycling, is adequate.

Many Canadian communities have embraced sustainable development concepts within municipal and regional plans. These plans, developed in consultation with local stakeholders, aim to mitigate environmental impacts associated with urbanization, including transportation. Housing types and residential development that reduce land requirements and facilitate the use of more sustainable modes of transportation are encouraged. Improved long-term land-use planning and modelling exercises are being used to deal with the challenges tied to growth, changing demographics, and lifestyle preferences.

### COMMERCIALIZING ENVIRONMENTAL TECHNOLOGY

Vancouver-based Westport Innovations Inc. is commercializing a technology that allows diesel engines to run on clean-burning natural gas.

Westport's High Pressure Direct Injection (HPDI) technology maintains the high efficiency and performance of diesels while drastically reducing particulate matter, smog-causing emissions of nitrogen oxides (NOx) and greenhouse gases. Nitrogen oxides and particulate matter are reduced by approximately 50 per cent and greenhouse gas emissions by up to 25 per cent compared with current diesel engines. HPDI has been tested successfully on transit buses in Canada and California.

In Canada, there are a number of ongoing initiatives aimed at improving fleet performance and encouraging the development of alternative fuels. Some of these initiatives are described in the following sections.

## ALTERNATIVE FUELS

Progress has been made in vehicle and fuel technologies that result in low or zero emissions. Electric vehicles, hybrid electric vehicles, and fuel-cell power systems will all have a role to play in the future of the transportation sector. Fuel-cell technology, such as that being developed by Ballard Power systems of British Columbia, is currently being tested in small residential areas and on transit buses in several North American cities.

## PUBLIC AWARENESS AND BEHAVIOURAL CHANGES

Achieving sustainable transportation will depend largely on increasing public awareness of related issues and changing behaviour. Enhancing public awareness of sustainable transportation issues and potential solutions is a major effort in Canada.

### TRANSPORT CANADA FLEET OF ALTERNATIVE FUEL VEHICLES

Transport Canada has a fleet of 300 motor vehicles located mostly in regional offices and Transport Canada Centres (TCCs) across the country. They are used to provide travel in the field as required by Transport Canada's inspectors and officers. In 1999, the Environmental Affairs Directorate, and Materiel and Contracting Services launched a vehicle fleet environmental management program to look at options to optimize the use of Transport Canada's operational fleet. Recently, the automotive industry has focused on a new type of technology that addresses these concerns: hybrid vehicles. Hybrid vehicles can either run on two different types of fuel, or can run on two different types of engines with the same fuel.

Transport Canada has recently purchased a number of hybrid vehicles that fit into both of these categories. As of October 2000, it owned 55 alternative fuel vehicles:

Type of Fuel	Number of cars
Electric/Gasoline Hybrid	10
Natural Gas/Gasoline Hybrid	25
E85 (85 per cent Ethanol +	
15 per cent Gasoline)	16
Electric (mono-fuel)	2
Propane (mono-fuel)	2
<b>Total</b>	<b>55</b>



## MOVING ON SUSTAINABLE TRANSPORTATION

The Moving On Sustainable Transportation (MOST) program was launched in September 1999. The program is providing \$1 million over three years, to assist non-governmental projects that promise to deliver concrete results in support of Transport Canada's commitment to sustainability. Under the MOST program, Transport Canada committed \$400,000 to support 12 sustainable transportation projects in 2000, including:

**Visibility, imaging and positioning** — The Canadian Urban Transit Association (Ontario) will develop marketing strategies to promote increased ridership and identify barriers to the use of public transit in Canada.

**Active and Safe Routes to School** — Greenest City (Ontario) will implement a walk-to-school program in school districts in southern Ontario.

**Ride the Wind!** — The Pembina Institute for Appropriate Development (Alberta) will create partnerships to build support for the use of green power sources for Calgary's light rail transit system.

**Reducing greenhouse gas emissions from forestry haul operations** — The Forest Engineering Research Institute of Canada (Quebec) will evaluate the performance of a forestry truck equipped with leading-edge technology that will reduce its fuel consumption, and greenhouse gas and other emissions.

**The Sustainable Living Bus** — The Sierra Club's dynamic mobile learning centre visited communities across Canada. The exhibit has interactive displays on such issues as transportation, recreation, energy and water use, and sustainable shelter. It informs Canadians about ways to adopt a more sustainable lifestyle.

**Interactive educational exhibit** — The Conseil régional de l'environnement et du développement durable de l'Outaouais (Quebec) organized an educational interactive exhibit on transportation and the environment, focusing on practical alternatives to the automobile.

**Active Transportation Education and Outreach Strategy** — Go for Green (Ontario) will promote alternative modes of transportation for healthy environments and healthy people through a series of mini-radio messages, television segments and a comprehensive Web site.

**Breaking the Barriers: Teens and Cycling** — Citizens for Safe Cycling (Ontario) will encourage students at five high schools in the Ottawa-Carleton region to use bicycles as a green mode of transportation.

**Climate Change Communiqués** — The Canadian Automobile Association will provide its members with information on climate change and sustainable transportation issues.

**BikeCartAge: Priming the "Zero Pollution" Pump** — The Victoria Centre for Appropriate and Responsible Transportation Society (British Columbia) will initiate a demonstration project at the University of British Columbia to reduce car use by introducing a bike-based delivery system.

**Campagne de sensibilisation liée à la problématique du transport durable** — The Fondation québécoise en environnement (Quebec) will create and disseminate a public awareness message to promote sustainable transportation alternatives that will be broadcast at movie theatres in Quebec.

**Campagne de sensibilisation et de mobilisation des motoneigistes au transport durable** — Nature-Action Québec Inc. (Quebec) will raise awareness of over one million snowmobilers in Quebec regarding the impact of their activities on the environment.

Clean Air Day Canada is an example of a federal government program aimed at increasing public awareness. It targets two key environmental priorities, clean air and climate change. It is a grassroots, locally driven program relying on strong partnerships with all sectors of society. In 2000, Clean Air Day focused on sustainable transportation, highlighting initiatives by environmental and health organizations, transit companies, and private sector businesses in over 60 communities all across Canada.

The Climate Change Action Fund (CCAF), established by the Government of Canada in 1998, supports, among other things, initiatives that increase public awareness and understanding of climate change. The objectives are to provide balanced information to Canadians; explore the barriers to action; motivate positive behaviour change; focus on what Canadians can do at home, at work, and on

the road; encourage activities in communities, schools, businesses and industries; and leverage resources and promote partnerships. Just under one quarter of the projects is transportation-related.

## TRANSPORT CANADA'S AWARENESS PROGRAM

To raise awareness of the benefits of choosing more sustainable transportation modes to commute to work in 2000, Transport Canada launched an internal "Green Commute" program to promote sustainable commuting behaviour among its employees in the National Capital Region.



## NOISE POLLUTION

Although noise pollution from transportation activities is a non-residual pollutant, the effect of noise on the quality of life continues to be an issue for Canadians.

A great deal of international effort has been made recently to mitigate the impact of noise caused by aircraft landings and departures at airports. In this regard, the work of the Committee on Aviation Environmental Protection (CAEP) of the International Civil Aviation Organization (ICAO) over the last three years culminated, in the development of a comprehensive series of recommendations to reduce the environmental impact of aircraft noise and engine exhaust emissions.

The conclusions and recommendations of the Committee will help to formulate new policies and the adoption of new standards for aircraft noise reduction. This in turn will support country members and the air transport industry in achieving maximum compatibility between the safe and orderly development of civil aviation and the quality of the environment. On aircraft noise, CAEP endorsed a balanced approach to noise mitigation, consisting of four distinct, complementary elements: reduction of noise at source; improved land-use planning and control; a wider use of noise abatement operational procedures; and operating restrictions.

# TRANSPORTATION AND REGIONAL ECONOMIES

# 6

*For Newfoundland and Prince Edward Island, marine is the most important transport mode, compared with trucking for Nova Scotia and New Brunswick. In central Canada, commercial transportation accounts for a relatively low share of provincial GDP, while the opposite is true in western provinces.*

Transportation is an important link in the Canadian economy, necessary for moving people and goods within provinces, between provinces, and between provinces and other countries. This chapter demonstrates the importance of transportation to provincial economies through the use of two indicators: the value-added<sup>1</sup> of commercial transportation firms<sup>2</sup> located within provincial boundaries; and the domestic demand<sup>3</sup> for transport-related goods and services purchased by provincial residents. Within this chapter, use of these two indicators is based on data taken from Canada's system of national accounts for 1999, the latest year for which provincial data are available.

This chapter also provides a socio-economic profile of the provinces, which describes some key aspects of the population, geography and economy that influence the relative importance of transportation to overall provincial economies.

The value-added of commercial transportation will be compared with provincial gross domestic product (PGDP), the standard measure of a province's total value of production. Domestic transportation demand will be compared with a province's final domestic demand (PFDD), a measure of the total value of sales in the provincial economy. The two aggregate economic measures are related in that PGDP is equal to PFDD, plus the trade balance.

## A SOCIO-ECONOMIC PROFILE OF PROVINCIAL ECONOMIES

The importance of transportation to a provincial economy, and its predominant modes, is primarily determined by the province's geography, its economic structure, and to a lesser extent, its demographics. The factors that influence the supply and demand for transportation within a provincial economy can be better understood by taking a socio-economic look at Canada's provinces.

Geographic factors include a province's geographic area, the relative dispersion of the population, and the existence of natural barriers to transportation, such as mountains or oceans. For example, the territories and Quebec have the largest geographic areas in Canada. The territories, Newfoundland, Manitoba and Saskatchewan have the lowest population densities. The territories and eastern provinces have a higher proportion of rural population than that in the central and western provinces. Areas with the highest elevation are found in the territories, British Columbia and Alberta, while Newfoundland and Prince Edward Island are islands.

Another major geographic factor is location relative to major markets and producing centres. In Canada, the relative proximity of Ontario to major US markets coincides with the lowest share of transportation in all provincial economies, while the relative proximity of

1 Value-added refers to the payments (e.g. wages, profits) made to the principal factors — labour and capital — employed in production throughout the provincial economy. As value-added is determined by the payments to labour and capital, using this concept means that the importance of transport to provincial economies is determined by the location of the workers and capital employed by commercial carriers. Value-added is a measure of the production or supply of transport.

2 Commercial transportation can be defined as industries that transport goods and/or passengers for a fee.

3 Domestic transportation demand measures direct transport-related expenditures by consumers, businesses and governments located within the province. It underestimates the value of commercial transportation to provincial economies because it does not take into account indirect transportation used by industry to produce non-transport-related goods and services (e.g. shoes or apples).

Manitoba and New Brunswick to central Canada coincides with the highest shares of transportation in all provincial economies. Their adjacent and central locations may make these provinces good hub locations for transportation moving into and out of central Canada, thus attracting a higher share of transportation company operations and head offices.

The size and structure of a province's economy also strongly influence the relative importance of transportation, particularly the modal split of transportation activities within the province. There are two major economic characteristics that come into play here: the share of primary commodities in a provincial economy; and the relative importance of trade. As Table 6-1 shows, Alberta, Saskatchewan and the territories have the highest share of primary commodities, while Ontario and Quebec have the lowest share. In terms of trade in 1999, Ontario, New Brunswick and Saskatchewan have the highest levels of exports, while

the four eastern provinces have the highest levels of imports.

Relative provincial economic growth also influences transportation industry growth. As Table 6-1 shows, Newfoundland, Nova Scotia and Ontario experienced the fastest growing economies in 1999. This growth in Newfoundland and Nova Scotia resulted from new energy sources, and in Ontario from manufacturing and trade with the United States. The western provinces, particularly Saskatchewan, experienced the slowest growth, due to depressed world commodity prices in 1999 and continuing slow Asian growth.

Finally, a province's demographic make-up can influence the relative importance of different aspects of transportation — notably consumer demand for certain types of transportation, such as vacation-related travel or pick-up trucks. By population, the provinces are uneven in size, with Ontario and Quebec accounting for over 60 per cent of the country's total and thereby also

**TABLE 6-1: A SOCIO-ECONOMIC PROFILE OF CANADA'S PROVINCES, 1999**

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories
<b>Demography</b>											
Population (2000)	538,823	138,928	940,996	756,598	7,373,448	11,669,344	1,147,880	1,023,636	2,997,236	4,063,760	100,438
Age 0-15 (per cent)	17.4	19.8	18.2	18.0	17.9	19.5	21.0	21.6	20.9	18.1	28.4
Age 16-24 (per cent)	14.8	14.4	13.5	13.6	13.3	13.1	13.9	14.9	14.8	13.3	16.0
Age 25-44 (per cent)	31	29.3	30.8	31.1	31.1	32	29.7	28.3	33	31.6	33.3
Age 45-64 (per cent)	25.1	23.4	24.2	24.3	24.9	22.9	21.9	20.8	21.3	24	18.2
Age greater than 64 (per cent)	11.6	13.1	13.2	12.9	12.8	12.6	13.5	14.5	10.1	13.0	4.1
Population growth											
-1996-2000 (per cent)	(0.8)	0.4	0.2	0.1	0.3	1.0	0.2	0.1	1.5	0.9	0.1
Population with											
post-secondary education											
- 1996 (per cent)	35.5	38.5	41.8	35.6	38.2	41.2	36.2	35.4	42.2	43	42.4
<b>Geography</b>											
Total area (km <sup>2</sup> )	405,212	5,660	55,284	72,908	1,542,056	1,076,395	647,797	651,036	661,848	944,735	3,921,739
Highest elevation (metres)	1,652	142	532	817	1,652	693	832	1,468	3,747	4,663	5,959
Population density											
(per km <sup>2</sup> )	1.33	24.55	17.02	10.38	4.78	10.84	1.77	1.57	4.53	4.30	0.03
Urban Population											
- 1996 (per cent)	56.9	44.0	54.8	48.8	78.4	83.3	71.8	63.3	79.5	82.1	47.9
<b>Economy</b>											
Provincial Gross Domestic											
Product (PGDP)											
(millions of 1992 \$)	9,433	2,537	17,924	14,187	158,517	313,510	25,244	23,886	92,110	91,965	3,469
Primary (per cent of PGDP)	11.8	7.3	3.8	5.5	3.0	1.9	5.2	21.7	19.2	6.7	16.1
Manufacturing and											
Construction (per cent)	12.1	15.5	17.9	18.5	25.9	28.2	18.1	12.1	18.2	16.2	9.0
Government Services (per cent)	9.8	11.9	10.8	9.7	6.6	5.4	8.1	6.1	4.8	5.6	19.4
Other Services (per cent)	66.3	65.3	67.5	66.2	64.5	64.4	68.6	60.1	57.8	71.6	55.5
Exports (per cent) <sup>1</sup>	47.1	51.5	45.1	63.5	53.4	69.3	59.2	62.4	56.9	43.2	47.2
Imports (per cent)	68.4	68.7	67.6	78.2	54.0	58.3	62.6	66.5	53.5	50.7	66.5
Gross Domestic Product											
(GDP) Growth 1998-1999											
(per cent)	6.5	3.3	5.1	4.2	4.6	5.7	2.4	1.4	2.1	2.6	2.3

<sup>1</sup> Exports and imports include interprovincial and international trade.

Source: Statistics Canada Web site, Canadian Statistics ([www.statcan.ca/english/Pgdb/](http://www.statcan.ca/english/Pgdb/)); Statistics Canada, Cat. 93-357; A National Overview — Population and Dwelling Counts; Data Products, 1996 census.

accounting for the majority of transport activity. In general, the provincial populations have a relatively similar age structure. The northern territories (Yukon, Northwest Territories and Nunavut), however, are characterized by a large proportion of people under the age of 15 and a relatively small proportion of people over 65. Over the last five years, population growth has been concentrated in Ontario, Alberta and British Columbia, while Newfoundland has experienced a net decline.

## THE VALUE-ADDED OF COMMERCIAL TRANSPORTATION

The relative share of commercial transportation in provincial economies can be examined in terms of its portion of PGDP.

In the eastern provinces, commercial transportation represents a high portion of PGDP because of the relatively large distance from markets in central Canada, the high share of imports, and the moderate levels of primary commodity production. As New Brunswick is the closest eastern province to both central Canada and the United States, it may act as a hub for transport to and from the eastern provinces. New Brunswick, therefore, has a higher share of commercial transport than the other eastern Canadian provinces, and the second highest share, after Manitoba, of all provinces.

The geography of the eastern provinces influences the relative importance of the modes, notably on the two islands of Newfoundland and Prince Edward Island, where marine is the most important transport mode and has the largest share of PGDP of all provinces. Newfoundland also has the highest share of the air mode of all provinces. Truck transport is the most important mode in Nova Scotia and New Brunswick, with trucking in New Brunswick having the largest share of all provinces.

In central Canada (Ontario and Quebec), commercial transportation accounts for relatively low shares of PGDP because of the low share of primary commodities in the economy, the relatively higher population density, and the proximity to large US markets.<sup>4</sup> In both provinces, the most important mode is trucking, followed by public passenger transit.

In the western provinces, commercial transportation accounts for relatively higher levels of PGDP because of the reliance on primary commodity production, the lower population density, and the larger distance from markets relative to central Canada. Manitoba has the highest commercial carrier share of all provinces, possibly due to its location as a hub for western traffic coming into and out of central Canada. British Columbia is similar to Manitoba in that it is a hub for transport to the Pacific Rim countries, which, combined with its difficult geography, also generates a relatively high share of commercial transportation. Saskatchewan also has a relatively high level of commercial transportation, while Alberta has the lowest share of the western provinces.<sup>5</sup> The territories also exhibit a relatively high share of commercial transportation, due to the dispersion of population and the distance from southern Canada.

The main modal characteristic of the western provinces is the higher importance of rail transport. Rail is the most important mode in Saskatchewan, which has the highest share of rail as a percentage of PGDP of all provinces. In Manitoba, Alberta and British Columbia, trucking is the largest mode, followed by rail in Manitoba and Alberta, while marine is second to trucking in British Columbia. The share of air in the territories is higher than for all provinces. Table 6-2 shows the relative share of commercial transportation in provincial economies in 1999.

Table 6-3 illustrates annual growth in commercial transportation in 1999. In the eastern provinces, commercial transportation growth lagged behind PGDP growth in all provinces except New Brunswick. The fastest growing modes were rail and truck freight, while declines were posted by water and air transport in Prince Edward Island and air transport in Nova Scotia.

Commercial transport growth exceeded PGDP growth in Ontario but lagged PGDP growth in Quebec. The highest growth rates were for trucking in Ontario and rail in Quebec, with air transport posting declines in both provinces, along with marine in Ontario.

In all western provinces, commercial transport growth exceeded or equalled PGDP growth, though not in the territories. Truck transport led growth in all provinces, while Manitoba, Saskatchewan, British Columbia and the territories posted declines for air. Public passenger transit was the leading growth mode in the territories.

4 It is also possible that the central provinces are served by a higher proportion of transportation firms located in other countries, thus reducing the relative importance of the value-added of domestic commercial transportation firms located within those provinces.

5 The commercial carrier share of the provincial economies in Alberta principally, but also Saskatchewan, will considerably underestimate the importance of transportation to these provinces, as the principal and most valuable primary commodities produced (oil, natural gas) are generally transported by pipeline. Pipelines are currently not considered transportation by Transport Canada, but will be in 2001 with the advent of the North American Industrial Classification System.



**TABLE 6-2: RELATIVE IMPORTANCE OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999**

(Per cent)

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	Canada
Transportation Industries	<b>5.1</b>	<b>5.2</b>	<b>4.4</b>	<b>5.9</b>	<b>4.0</b>	<b>3.1</b>	<b>6.1</b>	<b>5.1</b>	<b>4.6</b>	<b>5.2</b>	<b>5.6</b>	<b>4.0</b>
Air Transport	1.0	0.3	0.5	0.3	0.5	0.4	0.7	0.2	0.5	0.9	1.7	0.5
Railway Transport	0.2	0.0	0.0	0.8	0.4	0.4	2.1	2.0	1.0	0.9	0.0	0.6
Marine Transport	2.0	2.0	1.3	0.7	0.3	0.1	0.0	0.0	0.0	1.0	0.6	0.3
Truck Transport	1.0	2.0	1.8	3.2	1.5	1.4	2.3	2.1	2.4	1.4	1.8	1.7
Public Passenger Transit	0.2	0.0	0.2	0.1	0.7	0.4	0.3	0.2	0.3	0.4	0.1	0.4
Other transport	0.7	0.8	0.6	0.8	0.6	0.4	0.6	0.6	0.4	0.5	1.3	0.5

Source: Statistics Canada, Transportation Division; Transport Canada estimates

## DOMESTIC TRANSPORT-RELATED DEMAND

Domestic transportation demand refers to a broader definition of transport, which includes 1) consumer expenditures on transportation (e.g. automobiles), 2) investment by government and business in transportation equipment and infrastructure, and 3) government expenditures on transport<sup>6</sup> (e.g. highway maintenance). Transportation demand refers to the direct expenditures on transport-related goods and services by consumers, businesses and governments located within the province. Domestic transport demand can be compared with provincial final domestic demand (PFDD), the total value of all goods and services sold within the provincial economies.

Domestic transportation demand can be examined as the relative proportion of provincial final domestic demand. The most interesting observation is the predominance of personal expenditures, which form the largest segment of domestic transportation demand in all provinces and territories. The largest component of personal expenditures in all provinces, except Prince Edward Island and the territories, is new and used transportation equipment. In Prince Edward Island, the

largest component is fuel and lubricants, while in the territories it is purchased commercial transportation. The second largest component of transportation demand in all provinces, but not in the territories, is transportation investment. The largest component of investment is in transportation equipment in all provinces, except Prince Edward Island and the territories, where infrastructure investment, such as roads and airport runways, is larger. Government spending on transportation forms the smallest component of total transportation demand in all provinces, but is larger than the investment component in the territories.

In 1999, New Brunswick had the highest level of domestic transportation demand of all provinces, generated by a relatively high level of consumer and business demand for transportation equipment, as well as a high level of infrastructure investment. Ontario and Quebec were next, due largely to high levels of personal expenditures on transportation equipment. The lowest levels were in the territories, Saskatchewan, Newfoundland and Nova Scotia.

Table 6-4 indicates the relative proportion of domestic transportation demand as a portion of provincial final domestic demand in 1999.

**TABLE 6-3: ANNUAL GROWTH OF COMMERCIAL TRANSPORTATION IN PROVINCIAL ECONOMIES, 1999**

(Per cent)

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	Canada
Transportation Industries	4.1	0.0	4.7	5.7	4.3	6.2	3.6	1.4	7.5	2.7	1.7	4.9
Air Transport	1.0	(0.9)	(2.2)	0.0	(0.4)	(2.4)	(1.1)	(0.6)	8.1	(3.5)	(1.1)	(0.9)
Railway Transport	10.0	0.0	44.1	9.1	15.4	7.6	1.4	1.0	2.1	3.2	0.0	5.0
Marine Transport	1.4	(1.3)	4.1	4.0	3.5	(0.3)	0.7	0.0	0.0	3.9	1.0	2.8
Truck Transport	10.2	0.0	8.8	7.1	6.5	13.0	8.1	1.4	11.7	5.8	6.8	9.5
Public Passenger Transit	6.7	0.0	0.0	7.1	0.9	0.0	3.8	0.0	2.3	4.5	25.6	1.7
Other Transportation	0.6	0.5	0.5	0.4	1.0	0.7	1.2	0.3	0.5	0.8	(2.6)	0.7
Provincial Gross Domestic Product	6.5	3.3	5.1	4.2	4.6	5.7	2.4	1.4	2.1	2.6	2.3	4.3

Source: Statistics Canada, Transportation Division; Transport Canada estimates

6 Government expenditures consist primarily of highway maintenance and urban transit subsidies; they do not include government investment in roads, which forms the principal component of infrastructure investment.

**TABLE 6-4: DOMESTIC TRANSPORT-RELATED DEMAND AS A PERCENTAGE OF PROVINCIAL FINAL DOMESTIC DEMAND, 1999**  
(Per cent)

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	Canada
<b>Personal Expenditures on Transportation</b>	<b>7.2</b>	<b>8.4</b>	<b>7.7</b>	<b>8.5</b>	<b>8.6</b>	<b>8.7</b>	<b>7.1</b>	<b>6.6</b>	<b>7.1</b>	<b>8.1</b>	<b>4.2</b>	<b>8.2</b>
New and Used												
Transportation Equipment	3.0	2.8	3.0	3.8	3.6	3.6	2.7	2.6	3.0	2.6	1.1	3.3
Repair and Maintenance Expenditures	1.0	1.4	1.1	1.3	1.3	1.2	1.2	1.2	1.0	1.1	0.5	1.2
Transportation Fuels and Lubricants	1.8	2.9	2.1	2.3	1.9	1.8	1.7	1.6	1.5	1.7	0.7	1.8
Other Auto Services	0.5	0.6	0.5	0.6	0.9	0.8	0.6	0.5	0.7	0.9	0.6	0.8
Purchased Commercial Transportation	0.8	0.8	0.9	0.5	0.9	1.3	0.9	0.6	0.9	1.7	1.4	1.2
<b>Investment in Transportation</b>	<b>2.1</b>	<b>2.3</b>	<b>2.0</b>	<b>3.4</b>	<b>2.6</b>	<b>2.6</b>	<b>2.8</b>	<b>2.5</b>	<b>2.9</b>	<b>2.3</b>	<b>1.7</b>	<b>2.6</b>
Infrastructure	0.7	1.2	0.5	1.1	0.7	0.6	0.8	1.0	0.9	0.8	1.2	0.7
Machinery and Equipment	1.4	1.1	1.5	2.3	1.9	2.1	2.0	1.5	2.1	1.5	0.5	1.9
<b>Government Spending on Transportation</b>	<b>1.0</b>	<b>1.4</b>	<b>0.7</b>	<b>1.4</b>	<b>1.2</b>	<b>1.1</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>2.4</b>	<b>1.2</b>
<b>TOTAL</b>	<b>10.3</b>	<b>12.1</b>	<b>10.4</b>	<b>13.2</b>	<b>12.5</b>	<b>12.5</b>	<b>11.1</b>	<b>10.3</b>	<b>11.3</b>	<b>11.6</b>	<b>8.4</b>	<b>12.0</b>

Source: Personal expenditures: Income and Expenditures Accounts, unpublished provincial data;

Investment: Income and Expenditures accounts, unpublished data, government spending on roads (from government chapter); Statistics Canada, Cat. 63-007, New Motor Vehicle Sales; government spending, derived from government chapter data.

Table 6-5 shows the annual growth in domestic transportation demand in 1999. In Newfoundland, Prince Edward Island, Quebec, Ontario and British Columbia, growth in transportation demand exceeded growth in provincial final domestic demand. The highest growth was in Newfoundland and Ontario, fuelled by increased equipment purchases by consumers and

businesses. Declines in growth in transportation demand in Saskatchewan and the territories are consistent with declines in total provincial domestic demand and result primarily from declines in equipment purchases by consumers in Saskatchewan, and from declines in purchased commercial transportation in the territories.

**TABLE 6-5: ANNUAL GROWTH IN DOMESTIC TRANSPORT DEMAND, 1999**

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Territories	Canada
<b>Personal Expenditures on Transportation</b>	<b>6.0</b>	<b>2.8</b>	<b>3.6</b>	<b>4.6</b>	<b>3.4</b>	<b>6.5</b>	<b>0.0</b>	<b>(1.8)</b>	<b>0.1</b>	<b>2.0</b>	<b>(9.2)</b>	<b>3.9</b>
New and Used												
Transportation Equipment	11.5	3.3	5.4	8.6	5.1	11.8	(1.6)	(3.8)	(0.8)	4.5	3.9	6.8
Repair and Maintenance Expenditures	2.0	3.1	1.1	2.1	4.6	3.7	(0.5)	(1.7)	1.0	(0.4)	(2.3)	2.7
Transportation Fuels and Lubricants	2.4	1.7	3.7	0.6	0.1	3.0	2.0	0.1	(0.2)	(1.3)	(17.0)	1.2
Other Auto Services	3.8	4.6	1.9	2.9	3.1	2.6	0.1	(0.5)	1.4	1.1	(9.0)	2.2
Purchased Commercial Transportation	2.4	3.1	1.8	3.3	2.9	2.7	1.8	0.9	1.8	3.5	(15.6)	2.6
<b>Investment in Transportation</b>	<b>15.3</b>	<b>8.2</b>	<b>8.1</b>	<b>7.2</b>	<b>14.5</b>	<b>15.7</b>	<b>7.3</b>	<b>1.6</b>	<b>4.3</b>	<b>18.9</b>	<b>3.2</b>	<b>12.9</b>
Infrastructure	4.6	3.1	(14.1)	(2.5)	3.0	(10.8)	(2.2)	1.1	9.0	20.1	(2.2)	0.0
Machinery and Equipment	21.9	14.3	19.4	12.4	19.7	26.3	11.9	1.9	2.6	18.3	18.3	18.6
<b>Government Spending on Transportation</b>	<b>4.4</b>	<b>(1.4)</b>	<b>(16.6)</b>	<b>(6.9)</b>	<b>(2.0)</b>	<b>(0.9)</b>	<b>(3.6)</b>	<b>(1.7)</b>	<b>4.6</b>	<b>12.1</b>	<b>(5.3)</b>	<b>(2.7)</b>
<b>TOTAL</b>	<b>7.6</b>	<b>3.2</b>	<b>2.7</b>	<b>3.9</b>	<b>5.0</b>	<b>7.6</b>	<b>1.3</b>	<b>(1.0)</b>	<b>1.6</b>	<b>6.0</b>	<b>(5.7)</b>	<b>5.0</b>
Provincial Final Domestic Demand	7.2	2.8	7.1	7.0	3.8	5.1	3.6	3.1	3.4	3.6	(3.0)	4.4

Source: Personal expenditures: Income and Expenditures Accounts, unpublished provincial data;

Investment: Income and Expenditures accounts, unpublished data, government spending on roads (from government chapter); Statistics Canada, Cat. 63-007, New Motor Vehicle Sales; government spending, derived from government chapter data.



# TRANSPORTATION AND EMPLOYMENT

# 7

*Employment in the transport industry continued to increase in 2000. Average weekly earnings were also on the rise while labour relations were relatively stable.*

Transportation remains a significant employer in Canada. In 2000, the total workforce in the sector approached 855,000 people with over 18,000 jobs created during the year.

Throughout the period 1996 to 2000, transportation accounted for an average seven per cent of total full-time employment in Canada. In 2000, there were over 12 million full-time employees in Canada. An estimated seven per cent of these employees were involved in activities related to transport.

This chapter covers the full-time employment in the different segments of the transport sector and associated services. Employment is approached from three angles: the number of employees involved in activities directly tied to transportation, the average annual compensation paid to these employees and the number of work stoppages that occurred in the transport sector. In some instances, the figures reported may not fully reflect all employees in the transportation sector or all those occupying transport-related functions. Such an underestimation of transportation's employment is primarily due to either a lack of detailed information allowing a proper allocation, or to the non-existence of official data in certain specific types of transportation occupations.

## WORKFORCE

Throughout the period 1996 to 2000, full-time employment in the transportation industry increased by 9.3 per cent in Canada. While employment has been steadily increasing since 1996, the largest increase was recorded in 1999, when employment grew by 3.2 per cent.

In 2000, there were an estimated 853,600 people working in the transport sector, a 2.2 per cent increase over 1999 levels. This constituted the second largest increase recorded since 1997, with more than 18,000 jobs created. Transportation services accounted for 75 per cent of full-time employment in 2000. Employees involved in activities related to transport infrastructure and associated services accounted for 10 and 11 per cent, respectively, while personnel employed by government departments and agencies accounted for the remaining three per cent.

Historically, the trucking industry has been the transportation sector's major employer, and this remained the case in 2000, with trucking accounting for 37.1 per cent of total full-time employment. The air industry ranked second with an estimated 130,600 employees, a 5.8 per cent increase over 1999 figures.

This chapter is divided in six sections. The first four pertain to full-time employment in the different segments of the transport industry. They are:

- Transport services
- Transport infrastructure
- Government services tied to transportation
- Associated services

Average salaries across modes are covered in the fifth section. The last section deals with labour actions.

Table 7-1 shows employment in the transport industry, by category, for the period 1996 to 2000.



**TABLE 7-1: TRANSPORTATION EMPLOYMENT BY CATEGORY, 1996 – 2000**

	(Thousands of workers)				
	1996	1997	1998	1999	2000 <sup>a</sup>
<b>Transport Services</b>					
Air <sup>A</sup>	61.5	70.2	78.2	84.1	90.1
Marine <sup>B</sup>	29.5	26.7	26.1	27.9	30.3
Rail <sup>C</sup>	35.1	34.0	32.5	31.3	31.3
Truck <sup>D</sup>	294.1	298.0	301.4	314.3	316.4
Bus/Urban Transit <sup>E</sup>	59.2	61.0	62.9	64.1	64.9
Local Services <sup>F</sup>	35.5	36.4	37.3	38.2	39.1
Other <sup>G</sup>	64.9	63.7	62.7	64.5	67.6
<b>Total</b>	<b>579.8</b>	<b>590.1</b>	<b>601.2</b>	<b>624.3</b>	<b>639.6</b>
<b>Transport Infrastructure</b>					
Air <sup>H</sup>	N/A	N/A	2.7	2.8	3.0
Marine <sup>I</sup>	1.7	1.6	1.5	1.5	1.5
Rail <sup>J</sup>	12.9	12.5	12.6	11.8	11.8
Highways <sup>K</sup>	68.8	65.2	66.5	68.0	68.9
<b>Total</b>	<b>83.4</b>	<b>79.3</b>	<b>83.3</b>	<b>84.1</b>	<b>85.2</b>
<b>Government Services<sup>L</sup></b>	<b>32.5</b>	<b>28.9</b>	<b>28.5</b>	<b>28.4</b>	<b>28.1</b>
<b>Associated Services</b>					
Air <sup>M</sup>	29.5	30.5	35.8	36.5	37.5
Marine <sup>N</sup>	5.6	5.7	5.4	5.4	5.4
Other Services <sup>O</sup>	49.9	53.1	54.6	56.2	57.8
<b>Total</b>	<b>85.0</b>	<b>89.3</b>	<b>95.8</b>	<b>98.1</b>	<b>100.7</b>
<b>Grand Total<sup>P</sup></b>	<b>780.6</b>	<b>787.7</b>	<b>808.8</b>	<b>834.9</b>	<b>853.6</b>

Notes: Due to confidential data that has only been included in Totals or the Grand Total, the individual sections do not necessarily add to the sums shown in the table.  
e: Transport Canada estimate N/A: not available

#### Sources:

- A 2000 based on 12 months of averaged annual data. Statistics Canada, Survey of Employment, Payrolls and Hours (SEPH), Cat. 72-002  
B Statistics Canada, SEPH, 2000 based on 12 months of averaged annual data  
C Transport Canada estimates based on Statistics Canada, Rail in Canada, Cat. 52-216  
D Statistics Canada, Trucking in Canada, Cat. 53-222, SEPH; Transport Canada for some years  
E Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215; Transport Canada  
F Transport Canada estimates based on 1991 and 1996 Census data  
G Public Transit residual, Other Transportation residual, Pipeline Transportation, SEPH  
H Canadian Airport Authorities, Local Airport Authorities, Transport Canada  
I St. Lawrence Seaway Management Corporation, Canadian Port Authorities  
J Transport Canada estimates based on Statistics Canada, Rail in Canada, Cat. 52-216  
K Transport Canada estimates based on 1991 and 1996 Census data  
L Government Estimates, Transport Canada estimates for provincial and territorial employment  
M Statistics Canada, SEPH - Travel Services; Year 2000 based on 12 months of data  
N Pilotage Authorities, BCMEA, MEA  
O Insurance Bureau of Canada, Census  
P Excludes part-time employees

## TRANSPORT SERVICES

### RAIL

The number of employees directly involved in the provision of rail transport services accounted for an average 73 per cent of total employees between 1995 and 1999, even though employment declined by 17.4 per cent over the same period. Although reductions of personnel were recorded in all employment categories, cuts were concentrated in jobs related directly to the transportation function.

In 1999, employment figures showed a 3.5 per cent decrease for activities tied to rail transport services compared with 1998 levels. A 3.3 per cent increase was

recorded in personnel classified as general. Although this increase put an end to the declining trend shown by this employment category between 1995 and 1999, it was outweighed by the 6.1 and three per cent declines in the transportation and equipment maintenance employment categories, respectively, that same year. Class I carriers were the major contributors to the employment decline in 1999, having reduced their personnel by more than 1,000 people.

Table 7-2 shows the employment in rail transport services, by category, from 1995 to 1999.

**TABLE 7-2: EMPLOYMENT BY RAIL TRANSPORT SERVICES, 1995 – 1999**

	Total Rail <sup>1</sup>	Transport Services	Class I	Class II and III <sup>2</sup>
<b>1995</b>				
General <sup>2</sup>		6,801	6,236	565
Transportation		19,719	17,676	2,043
Equipment maintenance		11,405	10,243	1,162
<b>Total</b>	<b>51,754</b>	<b>37,925</b>	<b>34,155</b>	<b>3,770</b>
<b>1996</b>				
General <sup>2</sup>		6,013	5,477	536
Transportation		18,206	16,225	1,981
Equipment maintenance		10,886	9,757	1,129
<b>Total</b>	<b>48,038</b>	<b>35,105</b>	<b>31,459</b>	<b>3,646</b>
<b>1997</b>				
General <sup>2</sup>		5,789	5,288	501
Transportation		17,719	15,684	2,035
Equipment maintenance		10,486	9,352	1,134
<b>Total</b>	<b>46,537</b>	<b>33,994</b>	<b>30,324</b>	<b>3,670</b>
<b>1998</b>				
General <sup>2</sup>		5,778	5,298	480
Transportation		16,915	14,708	2,207
Equipment maintenance		11,022	8,774	1,145
<b>Total</b>	<b>45,061</b>	<b>33,715</b>	<b>28,780</b>	<b>3,832</b>
<b>1999</b>				
General <sup>2</sup>		5,968	5,470	498
Transportation		15,753	13,728	2,025
Equipment maintenance		9,594	8,485	1,109
<b>Total</b>	<b>43,144</b>	<b>31,315</b>	<b>27,683</b>	<b>3,532</b>

- 1 Total rail employment limited to carrier personnel (does not include incidental rail services).  
2 Estimated number of managerial and administrative personnel allocated to transportation.  
3 Data may be understated due to exclusion of an estimation of a number of smaller Class III railways and some Class II railways which did not report their employment information.

Source: Statistics Canada, Rail in Canada, Cat. 52-216; Transport Canada

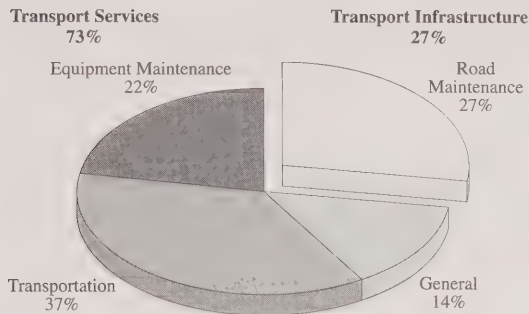
Figure 7-1 shows the distribution of rail employment in 1999 by category.

### TRUCKING

#### Medium and Large For-Hire Trucking Firms<sup>1</sup>

In 1999, employment by medium and large for-hire trucking companies had its greatest increase in five years. The number of truck drivers increased by 6.3 per cent,

1 A definition of medium and large for-hire trucking firms is found in Chapter 11, Structure of the Transportation Industry.

**FIGURE 7-1: DISTRIBUTION OF RAIL EMPLOYMENT BY CATEGORY, 1999**

Source: Statistics Canada, *Rail in Canada*, Cat. 52-216; Transport Canada

**TABLE 7-3: EMPLOYMENT BY MEDIUM AND LARGE FOR-HIRE TRUCKING FIRMS, 1995 – 1999**

	1995	1996	1997	1998	1999
Company drivers	50,323	51,833	51,256	52,739	56,037
Other employees <sup>1</sup>	39,963	37,182	40,397	39,685	46,600
<b>Total</b>	<b>90,286</b>	<b>89,015</b>	<b>91,653</b>	<b>92,424</b>	<b>102,637</b>

Note: Firms include Canadian-domiciled for-hire carriers with annual revenues of \$1 million or more.

1 Maintenance, garage, terminal and other employees.

Source: Statistics Canada, *Trucking in Canada*, Cat. 53-222, and special tabulations

while maintenance, garage, terminal and other personnel rose by 17.6 per cent, leading to an overall 11 per cent increase in employment over 1998. From 1995 to 1999, drivers accounted for a little more than 50 per cent of the personnel at medium and large for-hire trucking firms. In 1999, the proportion of drivers averaged 55 per cent.

Table 7-3 shows the number of people employed by medium and large for-hire trucking firms from 1995 to 1999.

In 1999, there were 102,637 employees working for medium and large for-hire trucking companies. Employees in Ontario accounted for 40 per cent of this figure, while those working in the Prairies and Quebec accounted for 25 and 20 per cent, respectively. Although employment grew in all regions, the largest increases were in Ontario and the Prairies, with employment up by more than 3,700 people.

Table 7-4 shows the regional distribution of personnel working for medium and large for-hire firms in 1998 and 1999.

### Small For-Hire Carriers

The number of employees working for small for-hire trucking companies slightly increased in 1998 by four per cent. This increase was entirely driven by a rise

**TABLE 7-4: EMPLOYMENT IN THE TRUCKING INDUSTRY, BY REGION**

	Canada	Atlantic Region	Quebec	Ontario	Prairie Provinces	British Columbia
<b>Employment by Medium and Large For-Hire Firms<sup>1</sup></b>						
1998 Company Drivers	52,739	3,132	11,989	20,793	12,854	3,971
Other Company Employees	39,685	3,907	7,295	16,626	9,120	2,737
<b>Total</b>	<b>92,424</b>	<b>7,039</b>	<b>19,284</b>	<b>37,419</b>	<b>21,974</b>	<b>6,708</b>
1999 Company Drivers	56,037	3,399	12,629	21,741	13,311	4,957
Other Company Employees	46,600	3,954	7,492	19,445	12,418	3,291
<b>Total</b>	<b>102,637</b>	<b>7,353</b>	<b>20,121</b>	<b>41,186</b>	<b>25,729</b>	<b>8,248</b>
<b>Employment by Small For-Hire Firms<sup>2,3</sup></b>						
1997 Full-time	25,624	1,911	7,065	5,265	7,415	3,968
Part-time	9,409	796	1,805	2,429	2,837	1,542
1998 Full-time	27,693	2,322	7,392	4,714	7,768	5,497
Part-time	8,640	871	2,295	1,610	2,561	1,303
<b>Employment by Private Carriers<sup>4</sup></b>						
1997 Highway drivers	4,379	133	1,007	2,364	533	342
Local drivers	8,001	433	2,297	2,897	1,257	1,117
Other employees	5,212	154	1,596	2,326	469	667
<b>Total</b>	<b>17,592</b>	<b>720</b>	<b>4,900</b>	<b>7,587</b>	<b>2,259</b>	<b>2,126</b>
1998 <sup>5</sup> Highway drivers	4,381	133	1,007	2,365	533	342
Local drivers	8,005	433	2,298	2,898	1,258	1,118
Other employees	5,214	154	1,597	2,327	469	667
<b>Total</b>	<b>17,600</b>	<b>720</b>	<b>4,902</b>	<b>7,590</b>	<b>2,260</b>	<b>2,127</b>
<b>Employment by Owner-Operators<sup>2,3</sup></b>						
1997 Full-time	64,242	5,699	12,593	18,597	18,022	9,330
1998 Full-time	63,304	5,485	10,357	21,396	17,259	8,809

1 British Columbia includes employment figures for the territories. Includes Canadian-domiciled for-hire carriers with annual revenues of \$1 million or more.

Other Employees: maintenance and garage, terminal and other employees.

2 Territories employment data included in British Columbia.

3 1999 data not available from Statistics Canada.

4 Statistics Canada's *Private Trucking Survey* suspended until further notice.

5 Estimated by Transport Canada.

Source: Statistics Canada, *Trucking in Canada*, Cat. 53-222 and Transport Canada

in full-time personnel, which accounted for 76 per cent of all workers employed by small for-hire carriers.

Table 7-4 shows the number of full-time and part-time personnel working for small for-hire trucking firms in 1997 and 1998.

### Private Carriers

In 1998, there were 17,600 employees working for private carriers. Local drivers accounted for 45 per cent of this total, while other personnel and highway drivers accounted for 30 and 25 per cent, respectively. Firms in Ontario and Quebec employed the majority of workers, accounting for 43 and 28 per cent, respectively.

Table 7-4 shows the regional distribution of employment by private trucking carriers, by category, for 1997 and 1998.

### Owner-Operators

In 1998, there were 63,304 full-time employees working for owner-operators. Firms located in Ontario and the Prairies were the major employers of these workers, with 34 and 27 per cent, respectively.

Table 7-4 shows the regional distribution of full-time personnel employed by owner-operators in 1997 and 1998.

### Total Trucking Employment

Total employment in the trucking industry increased by five per cent from 1995 to 1998. Owner-operators were the major contributors to this increase, with nearly 6,000 jobs created in this sector throughout the same period. In 1998, employment increased in all sectors, with the largest rise being recorded in the number of delivery drivers. Although a detailed breakdown of personnel was not available by sector for 1999, estimates indicate a 4.3 per cent increase in employment over 1998 levels. In

**TABLE 7-5: TOTAL EMPLOYMENT IN THE TRUCKING INDUSTRY, 1995 – 1999**

	1995	1996	1997	1998	1999
For-Hire					
Medium and Large <sup>1</sup>	90,286	89,015	91,654	92,424	102,637
Small <sup>2</sup>	32,388	35,754	35,033	36,333	N/A
Private <sup>3</sup>	20,242	19,993	17,592	17,600	N/A
Owner-Operators	57,335	61,377	64,242	63,304	N/A
<b>Subtotal</b>	<b>200,251</b>	<b>206,139</b>	<b>208,521</b>	<b>209,661</b>	<b>N/A</b>
Delivery Drivers <sup>4</sup>	95,940	97,400	98,900	100,409	N/A
<b>Total</b>	<b>296,191</b>	<b>303,539</b>	<b>307,421</b>	<b>310,070</b>	<b>N/A</b>

1 Includes Canadian-domiciled for-hire carriers with annual operating revenues of \$1 million or more.

2 Includes Canadian-domiciled for-hire carriers with annual operating revenues greater than \$30,000 and less than \$1 million. Includes part-time employees.

3 Includes Canadian-domiciled private carriers with annual operating expenses of \$1 million or more. Statistics Canada's Private Trucking Survey suspended until further notice. 1998 data shown is an estimation by Transport Canada based on 1997 data.

4 Based on 1996 Census data; estimated values for 1995, 1997 and 1998.

Source: Statistics Canada, *Trucking in Canada*, Cat. 53-222, SEPH, Cat. 72-002 and Transport Canada

1999, medium and large for-hire trucking firms reported an 11 per cent increase in employment.

Table 7-5 shows the employment in the trucking industry, by sector, from 1995 to 1999.

### Bus

Employment in the bus industry increased by five per cent from 1995 to 1999. In 1999, the number of full-time employees grew by less than two per cent. Of the total 64,057 employees working in the bus sector that year, 58 per cent worked for urban transit companies and 31 per cent worked for school bus companies.

Intercity operators have reduced their personnel significantly since the mid-1990s. In 1999, the number of employees totalled 3,127, a 1.8 per cent decrease since 1996. Major cuts took place in the other personnel categories, as well as in the number of drivers in 1998.

In 1999, employment declined by two per cent in the school bus industry. This decrease was driven mainly by a reduction in the number of drivers. Despite this, the

**TABLE 7-6: FULL-TIME EMPLOYEES IN THE BUS INDUSTRY, 1995 – 1999**

	1995	1996	1997	1998	1999
<b>Intercity Operators</b>					
Drivers	1,643	1,419	1,446	1,561	1,527
Mechanics	242	149	145	157	153
Other	1,660	1,571	1,369	1,478	1,446
<b>Total</b>	<b>3,545</b>	<b>3,139</b>	<b>2,960</b>	<b>3,196</b>	<b>3,127</b>
<b>School Bus Operators</b>					
Drivers	15,007	13,638	16,370	17,676	17,292
Mechanics	820	780	861	930	909
Other	1,663	1,398	1,478	1,596	1,561
<b>Total</b>	<b>17,490</b>	<b>15,816</b>	<b>18,709</b>	<b>20,202</b>	<b>19,762</b>
<b>Charter Operators<sup>1</sup></b>					
Drivers	1,720	2,431	1,782	2,290	2,521
Mechanics	214	219	160	274	193
Other	508	740	428	551	536
<b>Total</b>	<b>2,442</b>	<b>3,390</b>	<b>2,370</b>	<b>3,115</b>	<b>3,250</b>
<b>Shuttle Services<sup>2</sup></b>					
Drivers			402	462	594
Mechanics			30	16	29
Other			74	73	131
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>506</b>	<b>551</b>	<b>754</b>
<b>Urban Transit</b>					
General and Administration	4,160	4,114	4,014	3,344	3,805
Transport Operations	25,447	22,807	22,474	22,697	23,231
Vehicle Maintenance	7,888	9,931	9,990	9,826	10,128
<b>Total</b>	<b>37,494</b>	<b>36,852</b>	<b>36,478</b>	<b>35,867</b>	<b>37,164</b>
<b>Total Full-time Employees</b>	<b>60,971</b>	<b>59,197</b>	<b>61,023</b>	<b>62,931</b>	<b>64,057</b>

Note: Includes full-time workers of companies with annual revenues greater than \$2 million.

1 Data for 1995 and 1996 includes "Shuttle and Sightseeing Operators."

2 Employment data not available for "Scenic and Sightseeing Transportation" by bus prior to 1997.

Source: Statistics Canada, *Passenger bus and urban transit statistics*, Cat. 53-215 and special tabulations



school bus sector showed the strongest growth in the bus industry, with more than 4,000 jobs created between 1995 and 1999.

Charter operators and shuttle bus companies reported increases in total full-time personnel for the second year in a row. In 1999, the increase in drivers employed by charter operators outweighed the decline in mechanics and other personnel, leading to an overall increase of 4.3 per cent in employment. In the shuttle bus industry, employment increased in all categories in 1999, with drivers accounting for 65 per cent of the new employees.

Urban transit employment increased by 3.6 per cent in 1999. This increase put an end to the declining trend recorded over the last four years. Transport operations and vehicle maintenance personnel displayed their highest levels since 1996.

Table 7-6 shows the full-time employment figures in the bus industry from 1995 to 1999.

## TAXI AND LIMOUSINE SERVICES

Employment in this segment of the industry cannot be determined precisely on an annual basis. In 2000, the number of employees involved in the provision of taxi and limousine services was estimated at 39,000. This figure was derived by applying the annual growth rate (calculated over the period 1991 to 1996) in the taxi and limousine industry to the 1996 census data.<sup>2</sup> In 1996, workers in Ontario and Quebec accounted for 39 and 24 per cent of total employment, respectively.

## MARINE

From 1996 to 2000, average annual employment in the marine transport industry, including incidental services, increased by 2.9 per cent. In 2000, the number of people working in this sector totalled 30,266, the highest level of employment recorded over the last five years and an 8.4 per cent increase over 1999 levels.

In 2000, average annual employment, excluding services incidental to marine transport, increased by 11 per cent. Although employment rose in all regions, three provinces accounted for 85 per cent of the total increase: British Columbia, Ontario and Quebec. The number of workers in these provinces increased by more than 500 in 2000. British Columbia and the Atlantic Region had the highest employment levels between 1996 and 2000, accounting for 43 and 25 per cent of total employment, respectively.

Table 7-7 shows average annual employment in the marine transport industry from 1996 to 2000.

**TABLE 7-7: AVERAGE ANNUAL EMPLOYMENT IN THE MARINE TRANSPORT INDUSTRY, 1996 – 2000**

	1996	1997	1998	1999	2000
Atlantic Region <sup>1</sup>	3,482	3,461	3,945	4,241	4,536
Quebec	3,068	2,516	2,269	2,463	2,921
Ontario	2,883	2,361	2,463	2,707	3,215
British Columbia	8,073	7,554	6,669	6,929	7,441
Other Regions	276	248	168	150	161
Canada	17,783	16,140	15,514	16,490	18,274
<b>Total<sup>2</sup></b>	<b>29,516</b>	<b>26,726</b>	<b>26,097</b>	<b>27,911</b>	<b>30,266</b>

Note: Figures for period 1996 through 2000 are based on 12 months annual weighted data.

<sup>1</sup> 1999 and 2000 figures exclude marine employees not engaged in marine incidental services who are located in the provinces of Newfoundland and Prince Edward Island.

<sup>2</sup> Including incidental services.

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours (SEPH)*, Cat. 72-002

## Ferry Operators

Total employment figures for Canadian ferry operators declined by 17 per cent between 1996 and 1999. This decrease was mainly due to a 50 per cent drop in the number of employees working in the Atlantic Region after the completion of the Confederation Bridge to Prince Edward Island in 1997. The level of employment has remained relatively stable since then. Personnel employed by ferry operators in British Columbia dropped slightly in 1998 and 1999 returning to close to 1996 employment levels.

Table 7-8 shows the employment figures for Canadian ferry operators, by region between 1995 and 1999.

**TABLE 7-8: REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1995 – 1999**

	1995	1996	1997	1998	1999
Atlantic <sup>1</sup>	3,310	3,310	1,670	1,670	1,670
Quebec	610/740	597	710	710	710
Ontario	450	327	344	335	335
British Columbia	4,605	4,785	4,872	4,822	4,792
Prairies and Territories <sup>2</sup>	57	57	57	57	65
<b>Total</b>	<b>8,395/8,495<sup>3</sup></b>	<b>9,076</b>	<b>7,653</b>	<b>7,594</b>	<b>7,572</b>

Note: Data limited to members of the Canadian Ferry Operators Association. Figures are likely to underestimate real employment as data were not available for all ferry operators.

<sup>1</sup> Atlantic: Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland.

<sup>2</sup> Prairies and Territories: Manitoba and the Northwest Territories.

<sup>3</sup> Split numbers are due to seasonal fluctuations.

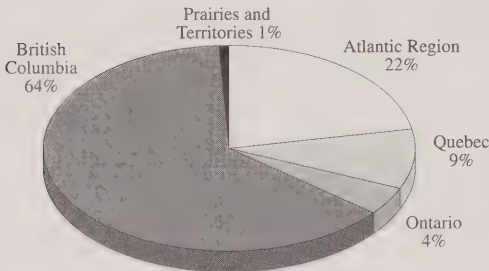
Source: Canadian Ferry Operators Association (CFOA)

Figure 7-2 shows the regional distribution of employment by Canadian ferry operators in 1999.

<sup>2</sup> In 1996, there were 35,490 taxi and limousine drivers according to census data.



**FIGURE 7-2: REGIONAL DISTRIBUTION OF EMPLOYMENT BY FERRY OPERATORS, 1999**



Source: Canadian Ferry Operators Association (CFOA)

## AIR

Employment in the air industry increased by 28.5 per cent over the last five years. In the mid-1990s, more than 75 per cent of all people working in the air sector were employed by Levels I–III air carriers. This proportion has been steadily decreasing since 1996, averaging 64 per cent in 1999. Nevertheless, increases in personnel were recorded in all air employment categories from 1995 to 1999.

In 1999, employment by Levels I–III air carriers increased by less than two per cent. Pilots and co-pilots accounted for 65 per cent of this increase, while management and administrative personnel accounted for 26 per cent. Employment by Level IV carriers declined by 8.6 per cent in 1999, the largest decline recorded over the last five years.

**TABLE 7-9: EMPLOYMENT IN THE AIR INDUSTRY, 1995 – 1999**

	1995	1996	1997	1998	1999 <sup>a</sup>
<b>Levels I–III<sup>1</sup></b>					
Pilots and Co-pilots	6,295	6,478	6,549	7,377	7,834
Other Flight Personnel	8,010	8,593	9,126	9,982	10,113
Management and Administration	3,590	3,523	3,631	4,013	4,227
Other Carrier Personnel	28,408	28,411	29,200	31,650	31,631
<b>Total</b>	<b>46,303</b>	<b>47,005</b>	<b>48,506</b>	<b>53,022</b>	<b>53,805</b>
<b>Level IV Total<sup>2</sup></b>	<b>4,077</b>	<b>4,537</b>	<b>4,361</b>	<b>4,646</b>	<b>4,226</b>
<b>Levels I–IV Total</b>	<b>50,380</b>	<b>51,542</b>	<b>52,867</b>	<b>57,668</b>	<b>58,031</b>
<b>Grand Total, Including Incidental Services<sup>3</sup></b>	<b>60,870</b>	<b>61,475</b>	<b>70,232</b>	<b>78,223</b>	<b>84,058</b>

P = Preliminary data.

<sup>1</sup> Canadian air carriers that in each of the two calendar years immediately preceding the report year, transported 5,000 revenue passengers or more or 1,000 tonnes of revenue goods or more.

<sup>2</sup> Canadian air carriers not classified in Levels I–III that, in each of the two calendar years immediately preceding the report year, realized annual gross revenues of \$500,000 or more for air services for which the air carrier held a licence. (<http://www.tc.gc.ca/Actsregs/ct-ltc/ct1.html>)

<sup>3</sup> Incidental services: jobs that are associated with the air industry but are not defined by Statistics Canada.

Source: Statistics Canada, Canadian Civil Aviation, Cat. 51-206 and Survey of Employment, Payrolls and Hours (SEPH), Cat. 72-002

Table 7-9 shows the employment in the air industry from 1995 to 1999.

## OTHER

There are a number of employees working for companies providing public passenger transit services or other services incidental to the bus transport sector that are not captured by Statistics Canada's survey on the bus industry. These employees are reported under the "other" public passenger transit employment figures in Table 7-10. From 1996 to 2000, employment in this category increased by 12 per cent despite a slight decline in 1997.

In 2000, there were 40,350 people employed in "other transportation" positions, the highest employment level recorded in this category since 1996.

While personnel employed in the pipeline transportation sector declined by four per cent over the last five years, it grew by five per cent in 2000.

Table 7-10 shows the employment in other directly transport-related occupations from 1996 to 2000.

**TABLE 7-10: OTHER DIRECT TRANSPORT-RELATED EMPLOYMENT, 1996 – 2000**

	1996	1997	1998	1999	2000 <sup>1</sup>
Other Public Passenger Transit	18,321	17,172	17,465	19,115	20,558
Other Transportation	39,562	39,514	38,687	39,005	40,350
Pipeline Transportation	7,005	7,027	6,590	6,419	6,740
<b>Total</b>	<b>64,888</b>	<b>63,713</b>	<b>62,742</b>	<b>64,539</b>	<b>67,648</b>

<sup>1</sup> 2000 based on 12 months of averaged annual data.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

## DATA GAPS IN TRANSPORTATION SERVICES

The number of employees involved in the provision of transport services is likely to be underestimated by the figures reported in this section of the report due to the absence of detailed information or the inexistence of the data in certain segments of the industry. For example, employment figures for Levels V and VI air carriers, general aviation or private air carriers were not available. In the marine sector, the number of employees associated with shipping conferences operating in Canada is unknown. In addition, it was not possible to determine precisely the personnel working for taxi and limousine companies since actual figures will not be available until the 2001 census is conducted. Many other workers employed by foreign carriers operating to and/or from Canada are not captured in the employment figures.

## TRANSPORT INFRASTRUCTURE

This section discusses employment at airports, harbours, ports and other transport facilities. It also covers personnel specifically devoted to the construction and maintenance of air, marine, rail and road infrastructure.

### RAIL

Throughout the period 1995 to 1999, the total number of employees involved in activities related to rail infrastructure services declined by 14.7 per cent. In 1999, the decrease in employment figures averaged seven per cent, the largest decrease recorded in the last three years. The reduction in the number of Class I personnel was the major contributor to this decline, with a seven per cent drop. Also in 1999, Class II and III rail carriers underwent a 7.6 per cent decline in employment. Employees devoted to the construction and maintenance of tracks, structures and signal installations accounted for an average 27 per cent of total employees over the last five years in the rail industry and for Class I carriers. This ratio was 32 per cent for Class II and III rail carriers.

Table 7-11 gives a breakdown of the number of employees in rail infrastructure services from 1995 to 1999.

**TABLE 7-11: EMPLOYMENT IN RAIL INFRASTRUCTURE SERVICES, 1995 – 1999**

	Total Rail <sup>1</sup>	Infrastructure Services	Class I	Class II and III
<b>1995</b>				
General <sup>2</sup>		2,274	1,999	275
Road Maintenance		11,555	9,999	1,556
<b>Total</b>	<b>51,754</b>	<b>13,829</b>	<b>11,998</b>	<b>1,831</b>
<b>1996</b>				
General <sup>2</sup>		2,041	1,782	259
Road Maintenance		10,892	9,392	1,500
<b>Total</b>	<b>48,038</b>	<b>12,933</b>	<b>11,174</b>	<b>1,759</b>
<b>1997</b>				
General <sup>2</sup>		1,965	1,726	239
Road Maintenance		10,578	9,064	1,514
<b>Total</b>	<b>46,537</b>	<b>12,543</b>	<b>10,790</b>	<b>1,753</b>
<b>1998</b>				
General <sup>2</sup>		2,054	1,825	229
Road Maintenance		10,634	9,001	1,633
<b>Total</b>	<b>45,061</b>	<b>12,688</b>	<b>10,826</b>	<b>1,862</b>
<b>1999</b>				
General <sup>2</sup>		2,052	1,816	236
Road Maintenance		9,743	8,260	1,484
<b>Total</b>	<b>43,144</b>	<b>11,795</b>	<b>10,076</b>	<b>1,719</b>

1 Total rail employment limited to carrier personnel, does not include incidental services.

2 Estimated number of management and administrative personnel allocated to rail infrastructure.

Source: Statistics Canada, *Rail in Canada*, Cat. 52-216; Transport Canada

### HIGHWAYS

Employment in the construction and the maintenance of Canadian highways is strongly influenced by economic and seasonal considerations. Employment cannot be determined precisely on an annual basis for highway departments at the federal, provincial or municipal levels.

In 2000, an estimated 68,900 people were employed in highway and heavy construction. This figure was derived by applying the growth rate of government expenditures on roads calculated over the 1996 – 2000 period to the 1996 census data.<sup>3</sup> This estimate is likely to overstate the actual number of people directly involved in the construction and maintenance of highways in Canada, since the proportion of employees performing heavy construction could not be deducted.

### MARINE

#### Canadian Port Authorities

In 2000, the total number of employees working for Canadian Port Authorities decreased by 7.2 per cent compared with the previous year's figures. The number of personnel declined in all employment categories, but the overall decrease was driven mainly by a reduction in the number of part-time employees.

Table 7-12 shows the employment figures for Canadian Port Authorities, by category, for the period 1998 to 2000.

**TABLE 7-12: EMPLOYMENT BY CANADIAN PORT AUTHORITIES, 1998 – 2000**

	Year	Management	Administration	Other	Total
Total Employees	<b>1998</b>	219	315	647	1,181
Full-time		209	265	405	879
Part-time		5	39	202	246
Contract		5	11	40	56
Total Employees	<b>1999</b>	215	346	694	1,255
Full-time		208	303	411	922
Part-time		1	34	214	249
Contract		6	9	69	84
Total Employees	<b>2000</b>	214	332	618	1,164
Full-time		200	309	418	927
Part-time		10	18	83	111
Contract		4	4	118	127

Note: Totals do not equal sum of parts, as some ports did not provide detailed breakdowns.

#### St. Lawrence Seaway Management Corporation

Throughout the 1996 – 1998 period, total employment reported by the St. Lawrence Seaway Authority (SLSA) declined by 12 per cent, a decrease driven mainly by a reduction in the personnel working in operations. In

3 In 1996, 68,820 people were working under the industry classification "Highway and Heavy Construction" according to census data.

December 1998, the SLSA became the St. Lawrence Seaway Management Corporation (SLSMC), and in 1999, employment decreased by a further eight per cent, again due mainly to a reduction in the number of operations employees. Preliminary data for the first eight months of 2000 indicated no variation in the number of full-time employees working for the SLSMC, although the distribution of these employees among the different employment categories changed slightly.

Table 7-13 shows the employment figures of the St. Lawrence Seaway Authority and the St. Lawrence Seaway Management Corporation from 1996 to 2000.

**TABLE 7-13: EMPLOYMENT BY CATEGORY, ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, 1996 – 2000**

	1996	1997	1998 <sup>1</sup>	1999 <sup>2</sup>	2000 <sup>3</sup>
Management	13	12	15	11	13
Administration	86	84	70	65	66
Operations	611	591	540	499	496
<b>Total</b>	<b>710</b>	<b>687</b>	<b>625</b>	<b>575</b>	<b>575</b>
Temporary	34	49	33	39	46

1 As at December 31, 1998, St. Lawrence Seaway Authority.

2 As at December, 1999, the St. Lawrence Seaway Management Corporation.

3 As at August, 2000, the St. Lawrence Seaway Management Corporation.

Source: St. Lawrence Seaway Management Corporation

## AIR

In 2000, there were 2,972 employees working for airports in the National Airports System (NAS), 4.7 per cent more than in 1999. Canadian Airport Authorities (CAA) and Local Airport Authorities (LAA) were the main employers of these people. Transport Canada employees in transit, which accounted for less than four per cent of this number, declined by 63 per cent. The largest increases in personnel were recorded in central and eastern Canada. The employment figures reported by CAAs and LAAs in the central region were 10 per cent higher than last year, while the employment in the Atlantic Region more than doubled.

Table 7-14 shows the number of airport employees in Canada's National Airports System in 2000.

**TABLE 7-14: EMPLOYMENT AT NAS AIRPORTS, 2000**

	CAA/LAA	Transport Canada Employees In-transit to NAS Airports	Total
Atlantic <sup>1</sup>	300	84	384
Central <sup>2</sup>	1,660	0	1,660
Western <sup>3</sup>	861	26	887
Territories <sup>4</sup>	41	0	41
<b>Total</b>	<b>2,862</b>	<b>110</b>	<b>2,972</b>

1 Atlantic: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick.

2 Central: Ontario, Quebec.

3 Western: Manitoba, Saskatchewan, Alberta, British Columbia.

4 Territories: Yukon, Nunavut, Northwest Territories.

Source: CAAs, LAAs, Transport Canada

## DATA GAPS IN TRANSPORTATION INFRASTRUCTURE

The actual number of employees working at transport facilities or devoted to the construction and maintenance of Canadian infrastructure is not accurately reflected in this section. Many employees have not been captured due to the lack of detailed information or the non-existence of data. For example, the number of employees responsible for the construction and maintenance of highways in Canada could not be identified precisely because the percentage of workers involved in heavy construction is unknown. The marine employment figures do not include personnel working in private firms and terminals, employed by non-port authorities, performing dredging, construction and maintenance of piers and berths, or occupying other infrastructure-related functions. Finally, airport employment excludes the employees of airports or facilities not belonging to the National Airports System.

## GOVERNMENT SERVICES TIED TO TRANSPORTATION

### FEDERAL GOVERNMENT SERVICES

In 2000/01, the number of full-time employees the federal government planned to assign to transportation declined by three per cent to 8,488. These workers are primarily employed at Transport Canada and the Canadian Coast Guard. However, the figures reported do not accurately reflect the number of employees occupying transport-related functions throughout federal government departments and agencies. This is because employment figures are not available at a detailed enough level to allow these transport activities to be clearly identified. Agriculture and Agri-Food Canada, Canada Customs and Revenue Agency, Heritage Canada, Citizenship and Immigration Canada, the National Capital Commission and the Royal Canadian Mounted Police are

**TABLE 7-15: PLANNED FULL-TIME EQUIVALENTS  
FEDERAL DEPARTMENTS AND AGENCIES**

	1996/97	1997/98	1998/99	1999/00	2000/01
Transport Canada	12,257	4,840	4,480	4,204	4,071
Canadian Coast Guard <sup>1</sup>		4,007	3,945	4,086	3,928
Transportation Safety Board	255	223	229	234	230
Canadian Transportation Agency	356	260	249	249	251
Civil Aviation Tribunal	8	8	8	8	8
<b>Total</b>	<b>12,876</b>	<b>9,338</b>	<b>8,911</b>	<b>8,781</b>	<b>8,488</b>

1 Included with Transport Canada until 1997/98.

Source: 1995-2000 Estimates, Federal Government Main Estimates



among the federal departments and agencies with employees performing activities tied to transportation who are not captured in these employment figures.

Table 7-15 shows the planned full-time equivalents devoted directly to transportation in federal departments and agencies over the past five years.

## PROVINCIAL AND TERRITORIAL GOVERNMENT SERVICES

From 1996 to 2000, the estimated number of employees involved in the provision of transport services has been steadily declining in provincial and territorial governments. Estimates of governmental services tied to transportation are reported at the beginning of this chapter. However, the employment figures shown in the summary Table 7-1 are likely to underestimate the number of employees provinces and territories actually devote to transport activities, as these figures do not capture employees providing highway patrol services and policing, safety or regulatory services, as well as those performing truck inspections.

## MUNICIPAL GOVERNMENT SERVICES

The number of municipal employees responsible for the construction and maintenance of roads, snow removal, vehicle parking lots, policing or occupying other transport-related functions has not been reported, since it was not possible to develop a comprehensive estimate of these personnel figures on a national scale.

## ASSOCIATED SERVICES

There is a wide variety of services incidental to air, marine and surface transportation. Associated services related to "operations" include food catering, equipment maintenance, insurance, marine bunkering and towing, and navigation support (traffic control, marine pilotage). Services related to "sales" include employees working for travel agencies, tour operators and wholesalers, intermodal marketing companies, freight brokers and forwarders, to list a few. Finally, there are a large number of people providing administrative support or other related functions, and many modal associations and unions in air, marine and surface transport with administrative and other employees. The estimate of total employment in the transport sector would not be accurate if the personnel involved in providing these services were not included.

In this section, employment figures for a certain number of these associated services are presented: employment

by marine pilotage authorities and maritime employers associations, full-time personnel employed by travel agencies, tour operators and wholesalers and NAV Canada personnel levels. The content of this section is limited by the lack of availability of further information on the number of employees occupying functions in other associated services.

## MARINE

### Pilotage Authorities

In 2000, the number of employees working for pilotage authorities increased slightly in all regions. The Atlantic and Laurentian pilotage authorities accounted for most of the three per cent increase. The Laurentian and Pacific regions have the most pilotage employees, with 40 and 30 per cent, respectively. From 1996 to 2000, pilots accounted for 75 per cent of the pilotage authorities' employment figures.

Table 7-16 shows the number of people employed by Canada's four pilotage authorities, by category, for the period 1996 to 2000.

TABLE 7-16: MARINE EMPLOYMENT, ASSOCIATED SERVICES, 1996 – 2000

	1996	1997	1998	1999	2000
<b>Pilotage Authorities</b>					
Great Lakes Pilotage	75	82	83	85	88
Atlantic Pilotage	73	72	72	72	78
Laurentian Pilotage	214	216	224	228	233
Pacific Pilotage	167	167	167	167	168
<b>Canada</b>					
Administration	44.5	44	42	44	43.5
Pilots	396	403	413	414	429
Other <sup>1</sup>	89	90	91	95	95
<b>Total</b>	<b>529</b>	<b>537</b>	<b>546</b>	<b>553</b>	<b>567</b>
<b>Employers Associations (EA)</b>					
Maritime EA <sup>2</sup>	1,204	1,285	1,279	1,253	1,195
British Columbia Maritime EA <sup>3</sup>	3,857	3,919	3,604	3,576	3,656

<sup>1</sup> Other includes dispatch, pilot boat and other unspecified services.

<sup>2</sup> Includes ports of Montreal, Trois-Rivières, Bécancour, Toronto and Hamilton.

<sup>3</sup> Includes ports of Vancouver, New Westminster, Prince Rupert, Chemainus, Port Alberni, Victoria, Port Simpson, Stewart and a category "Others."

Source: Canadian Pilotage Authorities, MEA, BCMEA

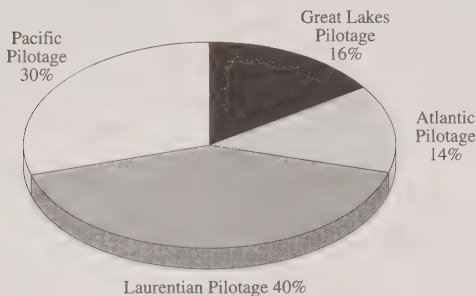
Figure 7-3 shows the distribution of employment among the four Canadian pilotage authorities in 2000.

### Maritime Employers Association

In 2000, the British Columbia Maritime Employers Association (BCMEA) showed a 2.2 per cent increase in its employment figures. Although the largest increase since 1997, it did not outweigh the staff reductions reported in the last two years. In 2000, the association showed a 5.2 per cent drop in its employment levels compared with 1996.



**FIGURE 7-3: MARINE PILOTAGE EMPLOYMENT DISTRIBUTION, 2000**



Source: Canadian Pilotage Authorities

In eastern Canada, the Maritime Employers Association (MEA) recorded a decrease in employees for the third consecutive year. The 4.6 per cent decline in the 2000 employment figures, in conjunction with the drops reported in 1998 and 1999, entirely cancelled out the 1997 increase in personnel, bringing the number of employees back to close to 1996 levels.

Table 7-16 shows the employment levels of the maritime employers associations for the period 1996 to 2000.

## AIR

### Travel Agencies, Tour Operators and Tour Wholesalers

There were 31,805 employees working for travel agencies, tour operators and tour wholesalers in 2000, a two per cent increase over 1999. Two thirds of these people were employed in Ontario and Quebec, with 42 and 25 per cent, respectively. Employees in western Canada accounted for 28 per cent of the total, nearly distributed evenly between the Prairies and British Columbia. Quebec had the highest increase in employment between 1996 and 2000, with nearly 20 per cent.

**TABLE 7-17: EMPLOYMENT BY TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS, 1996 – 2000**

	1996	1997	1998	1999	2000 <sup>1</sup>
Maritimes	646	856	842	869	674
Quebec	6,656	8,343	7,922	8,102	7,892
Ontario	12,712	11,938	12,018	12,527	13,478
Prairies	4,746	4,395	4,508	4,569	4,706
British Columbia	4,541	4,674	4,942	4,795	4,346
<b>Canada<sup>2</sup></b>	<b>29,466</b>	<b>30,487</b>	<b>30,488</b>	<b>31,179</b>	<b>31,805</b>

1. Tabulations for Year 2000 are based upon 12 months of averaged annual data.

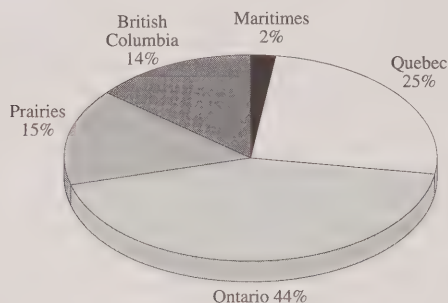
2. National totals do not sum to total of provinces, as some data were confidential or non-existent at the provincial level.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

Table 7-17 shows employment by travel agencies, tour operators and tour wholesalers, by region, for the period 1996 to 2000.

Figure 7-4 shows the regional distribution of employees working for travel agencies, tour operators and tour wholesalers in 2000.

**FIGURE 7-4: TRAVEL AGENCIES, TOUR OPERATORS AND TOUR WHOLESALERS EMPLOYMENT DISTRIBUTION, 2000**



Note: Distribution based on the sum of employment reported by region.

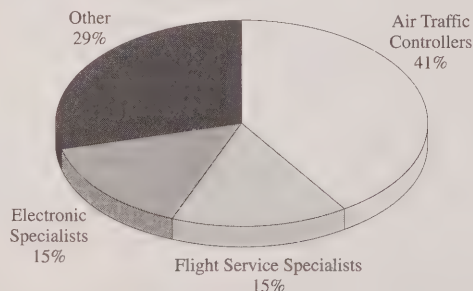
Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

## NAV Canada

In 2000, there were 5,346 employees working at Nav Canada, a 1.5 per cent increase over 1999.

This increase was mainly driven by a 13.7 per cent increase in other personnel (engineers, pilots, technical support personnel, administrative staff and management) while personnel levels decreased in all other employment categories. The number of electronic service specialists decreased by 6.5 per cent in 2000; the number of flight service specialists decreased from 875 to 825, a 5.8 per cent decline over last year figures; and the number of air traffic controllers decreased by less than one per cent.

**FIGURE 7-5: EMPLOYMENT BY NAV CANADA, 2000**



Source: NAV Canada annual report

Figure 7-5 shows the personnel levels at Nav Canada at the end of 2000

### Other Air-Related Associated Services

The Air Transport Association of Canada, the Canadian Air Traffic Control Association, the Canadian Owners and Pilots Association, the Canadian Seaplane Pilots Association and the Ultralight Pilots Association of Canada are among the numerous associations representing the interests of people in the air industry. The personnel employed by these air-related organizations could not be captured. There are also many unions in the air sector with administrative and other employees for which it was not possible to identify employment figures.

## AVERAGE SALARIES

### OVERVIEW

In 2000, average weekly earnings increased for all modes in the transportation sector. The trucking industry and public transit benefited from the highest increase, which averaged 2.1 per cent, and marine modes ranked second with a 1.6 per cent increase. From 1996 to 2000, employees working in the rail industry received weekly compensation 38 per cent higher, on average, than total transportation wages across all modes. The marine and air industries ranked second and third, respectively, in weekly earnings over the same period.

In 2000, workers in Alberta, British Columbia and Manitoba enjoyed the highest weekly earnings for transportation-related jobs, while workers in New Brunswick and Saskatchewan had the lowest. Between 1996 and 2000, British Columbia's weekly compensation

was the greatest. Manitoba's average weekly earnings rose by 11.8 per cent over the same period, the largest increase recorded across the country, followed by Alberta, with an 11.1 per cent increase. New Brunswick is the only province where average weekly earnings declined in 2000 compared with 1996.

Table 7-18 shows the average weekly earnings in the transportation sector by mode and province, for the period 1996 to 2000.

**TABLE 7-18: AVERAGE WEEKLY EARNINGS IN THE TRANSPORTATION SECTOR BY MODE AND PROVINCE, 1996 – 2000**

(Current dollars)					
By Mode <sup>1</sup>	1996	1997	1998	1999	2000 <sup>4</sup>
Total Economy	586	598	606	610	626
Total Transport	695	716	729	734	743
Rail	977	999	992	1,005	1,013
Water	813	829	828	836	849
Air <sup>2</sup>	803	816	812	825	834
Truck	613	638	674	669	683
Public Transit	577	627	632	645	659
Other <sup>3</sup>	659	690	694	700	705
By Province <sup>5</sup>	1996	1997	1998	1999	2000 <sup>7</sup>
Nova Scotia	N/A <sup>6</sup>	618	646	683	716
New Brunswick	653	648	610	637	642
Quebec	657	680	689	696	707
Ontario	702	727	740	730	739
Manitoba	686	710	700	740	767
Saskatchewan	615	638	635	641	661
Alberta	685	707	728	764	761
British Columbia	807	815	849	837	839

1 Does not include owner-operators, private trucking, delivery services or government employees.

2 Does not include incidental services (jobs that are associated with a particular industry but not defined in Statistics Canada Cat. 72-002).

3 Includes taxis, interurban and other modes.

4 Average based on 12-month weighted annual averages.

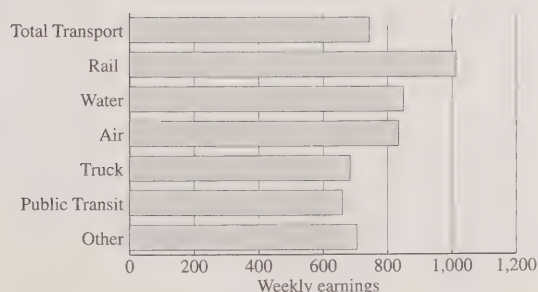
5 Comparable information not available for Newfoundland, Prince Edward Island and the territories.

6 Data available only for Transportation and Storage.

7 Estimate based on 12-month weighted annual averages.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

**FIGURE 7-6: AVERAGE WEEKLY EARNINGS, BY MODE, 2000**



Note: Average based on 12-month weighted annual averages.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Cat. 72-002

## RAIL

The average annual compensation of employees working in the rail industry has increased from \$51,602 to \$57,585 over the last five years, an 11.6 per cent improvement since 1995. Throughout this period (1995 to 1999), employees directly involved in transportation-related activities received the highest salaries, 15.7 per cent above the industry average in 1999. In addition, Class I carrier employees earned annual wages significantly higher than their Class II counterparts in each employment category except equipment maintenance. In 1999, compensation in the rail industry increased by 2.3 per cent. While the salary of transportation employees saw an increase of 5.7 per cent,

that of equipment and road maintenance employees increased by less than two per cent and the salary of workers classified as "general" declined by 2.9 per cent.

Table 7-19 shows the average annual compensation in the rail industry by employment category, for the period 1996 to 1999.

**TABLE 7-19: AVERAGE ANNUAL COMPENSATION IN THE RAIL INDUSTRY, 1996 - 1999**

	(Current dollars)		
	<i>Total Rail<sup>1</sup></i>	<i>Class I</i>	<i>Class II</i>
<b>1996</b>			
General	54,597	55,862	42,969
Transportation	58,273	59,316	49,767
Equipment Maintenance	44,976	44,573	48,500
Road Maintenance	46,040	47,328	38,062
<b>Total</b>	<b>51,870</b>		
<b>1997</b>			
General	57,831	59,281	43,654
Transportation	59,928	61,285	45,443
Equipment Maintenance	46,088	45,648	49,820
Road Maintenance	48,245	49,526	40,953
<b>Total</b>	<b>53,803</b>		
<b>1998</b>			
General	62,779	61,337	44,185
Transportation	63,046	64,271	48,800
Equipment Maintenance	46,280	45,475	49,167
Road Maintenance	49,966	50,617	40,323
<b>Total</b>	<b>56,264</b>		
<b>1999<sup>2</sup></b>			
General	60,974	62,445	46,374
Transportation	66,638	68,636	53,307
Equipment Maintenance	46,843	46,580	48,876
Road Maintenance	50,699	52,186	42,493
<b>Total</b>	<b>57,585</b>		

1 Total rail employment limited to carrier personnel.

2 Transport Canada estimates.

Source: Statistics Canada, *Rail in Canada*, Cat. 52-216

## TRUCKING

Average weekly earnings in the Canadian trucking industry fluctuate significantly from one province to another. From 1996 to 2000, three provinces have shown average weekly earnings above the national average: Alberta, British Columbia and Ontario. From year to year, British Columbia has displayed the highest weekly earnings, reaching 20 per cent above the national average in the last three years. In 1999, the lowest weekly earnings were recorded in the Atlantic provinces, coming close to 30 per cent below the national average in New Brunswick, Newfoundland and Prince Edward Island.

In 2000, a 1.9 per cent rise in the national average for weekly salaries was recorded. Weekly earnings increased in all provinces but New Brunswick, where a decline of less than one per cent was observed. Newfoundland displayed the largest increase, with earnings rising by

8.4 per cent. The highest weekly earnings were \$816 in British Columbia, while the lowest were \$480 in Prince Edward Island.

Table 7-20 shows the average weekly earnings in the trucking industry by province, for the period 1996 to 2000.

**TABLE 7-20: AVERAGE WEEKLY EARNINGS IN THE TRUCKING INDUSTRY, 1996 - 2000**

	(Current dollars)				
	1996	1997	1998	1999	2000 <sup>1</sup>
<b>Eastern Canada</b>					
Newfoundland	434	516	471	479	519
Prince Edward Island	478	535	470	463	480
Nova Scotia	505	538	558	584	612
New Brunswick	553	577	521	486	485
Quebec	553	573	616	613	620
Ontario	666	678	717	688	711
<b>Western Canada</b>					
Manitoba	575	590	619	632	657
Saskatchewan	540	569	588	553	555
Alberta	627	660	685	725	726
British Columbia	680	724	809	803	816
<b>Canada</b>	<b>613</b>	<b>638</b>	<b>674</b>	<b>669</b>	<b>683</b>

1 Average based on a 12 month weighted annual data.

Source: Statistics Canada, *Survey of Employment, Payrolls and Hours*, Cat. 72-002

## Bus

In 1999, average annual salaries in the passenger bus and urban transit industry declined in each industry segment except school bus transportation, where salaries increased by 9.4 per cent. School bus companies displayed the lowest average salaries over the last five years even though compensation rose by 11.9 per cent between 1995 and 1999, the largest increase recorded in the industry.

Intercity bus companies paid their employees an average annual salary of \$29,969 in 1999. This represented an 8.4 per cent decrease from 1998 levels and the largest drop in salary recorded over the last five years for this segment of the industry. Compensation in this segment has been steadily declining since the mid-1990s, with an overall drop of 16.8 per cent from 1995 to 1999.

The average annual salary earned by employees working for charter bus companies has declined significantly in the last two years: by 16.5 per cent in 1998, and by 8.2 per cent in 1999. The 27 per cent compensation improvement observed in 1997 did not make up for the overall average decrease of 17.5 per cent recorded from 1995 to 1999.

Although employees of companies providing shuttle and sightseeing bus services had the second lowest



annual salaries recorded since 1997, they had the largest salary raises. After a 21 per cent increase in 1998, salaries declined in 1999 by 4.5 per cent.

Urban transit companies displayed the highest average annual salaries from 1995 to 1999. Although compensation has been increasing since 1995, it showed a slight decline in 1999.

Table 7-21 shows the average annual salary in the passenger bus and urban transit industry by segment for the period 1995 to 1999.

**TABLE 7-21: AVERAGE ANNUAL SALARY IN THE BUS INDUSTRY, 1995 – 1999**

	(Current dollars)				
	1995	1996	1997	1998	1999
Intercity <sup>1</sup>	36,034	34,359	33,204	32,716	29,969
School Bus <sup>1</sup>	14,463	15,474	13,616	14,784	16,168
Charter <sup>1</sup>	23,185	19,652	24,982	20,856	19,137
Shuttle and Sightseeing <sup>1</sup>	N/A	N/A	16,225	19,613	18,729
Urban Transit <sup>2,3</sup>	50,882	52,275	52,827	53,826	53,356

Note: 1995 – 1999 data include full-time and part-time workers of companies with annual revenues greater than \$2 million.

1 Data exclude employee benefits.

2 Data include employee benefits.

3 1998 and 1999 data include part-time workers.

Source: Statistics Canada, Passenger bus and urban transit statistics, Cat. 53-215 and special tabulations

## MARINE

The salaries and benefits paid by Canadian-based marine carriers to their employees have increased by four per cent since 1995. The increase was driven mainly by an improvement in the compensation of non-vessel crew employees, whose salaries have increased by an average of 9.4 per cent since 1996. Employees of for-hire

**TABLE 7-22: ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN BASED MARINE CARRIERS<sup>1</sup>, 1995 – 1999**

	(Current dollars)				
	1995	1996	1997	1998	1999 <sup>2</sup>
<b>Government</b>					
Vessel Crew		48,982	51,429	51,020	51,020
Other		42,043	42,422	43,721	43,721
<b>Total</b>	<b>50,142</b>	<b>46,507</b>	<b>48,154</b>	<b>47,763</b>	<b>47,763</b>
<b>For-Hire<sup>3</sup></b>					
Vessel Crew		57,765	62,377	61,156	61,156
Other		40,255	41,748	47,533	47,533
<b>Total</b>	<b>51,750</b>	<b>52,580</b>	<b>56,915</b>	<b>57,127</b>	<b>57,127</b>
<b>Total</b>					
Vessel Crew		53,269	57,065	56,703	56,703
Other		41,340	42,147	45,209	45,209
<b>Total</b>	<b>50,600</b>	<b>49,291</b>	<b>52,370</b>	<b>52,540</b>	<b>52,540</b>

1 Private carriers information included with government carriers.

2 Estimates

3 Excluding Tour Boat Operator employees.

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

carriers saw their salaries increase by 10.7 per cent from 1995 to 1999, even though they showed only a 0.7 per cent increase in 1998.

For-hire carriers have higher labour costs than their government and private carrier counterparts, with an average gap of close to 15 per cent in recent years. The labour costs of government and private marine carriers declined slightly in 1998 (by less than one per cent), and have shown a downward trend of 4.7 per cent from 1995 to 1998.

Table 7-22 shows the average annual labour costs per employee for Canadian-based marine carriers for the period 1995 to 1999.

## AIR

Annual labour costs per employee increased by 7.8 per cent in 1999 for Levels I–IV Canadian air carriers, the highest annual salary rise in the last five years. All employees of Levels I–III carriers have seen a significant improvement in their compensation. The average salaries of other flight personnel, which have been slightly decreasing since 1997, rose by 11 per cent in 1999. Notwithstanding this increase, their salaries were still 20 per cent below the average Levels I–III annual salary. Management and administrative employees saw their remuneration increase by 9.7 per cent, while pilots and other carrier personnel benefited from five and 6.8 per cent salary increases, respectively.

In 1999, employees working for Level IV air carriers saw an increase of 6.2 per cent in their compensation. This increase put an end to a downward trend since 1996, but did not reduce the salary gap that exists between

**TABLE 7-23: ANNUAL LABOUR COSTS PER EMPLOYEE OF CANADIAN AIR CARRIERS, 1995 – 1999**

	(Current dollars)				
	1995	1996	1997	1998	1999 <sup>1</sup>
<b>Levels I–III<sup>2</sup></b>					
Pilots and Co-pilots	77,482	82,341	84,173	81,295	85,519
Other Flight Personnel	35,951	38,061	37,512	37,192	41,207
Management and Administration	48,734	51,072	49,937	52,551	57,525
Other Carrier Personnel	40,132	42,448	42,956	43,188	46,059
<b>Total</b>	<b>45,153</b>	<b>47,789</b>	<b>48,019</b>	<b>48,070</b>	<b>51,793</b>
<b>Level IV Total<sup>3</sup></b>	<b>42,794</b>	<b>43,700</b>	<b>43,003</b>	<b>42,863</b>	<b>45,615</b>
<b>Levels I–IV Total</b>	<b>44,962</b>	<b>47,429</b>	<b>47,606</b>	<b>47,650</b>	<b>51,343</b>

1 Preliminary data.

2 Includes Canadian air carriers that in each of the two calendar years immediately preceding the reporting year, transported at least 5,000 revenue passengers or at least 1,000 tonnes of revenue goods. (<http://www.tc.gc.ca/Actsregs/ct-ltc/ct1.html>)

3 Includes Canadian air carriers not classified in Levels I to III that in each of the two calendar years immediately preceding the reporting year, realized annual gross revenues of \$500,000 or more for air services for which the air carrier held a licence.

Source: Statistics Canada, Canadian Civil Aviation, Cat. 51-206



Level IV employees and their Levels I–III counterparts, which was 12.1 per cent in 1999.

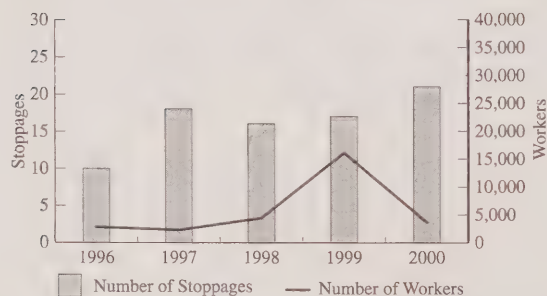
Table 7-23 shows the annual labour costs per employee by employment category for Levels I to IV of Canadian air carriers for the period 1995 to 1999.

## LABOUR ACTION IN TRANSPORTATION

### WORK STOPPAGES

In 2000, the number of labour actions for air, marine and surface transportation totalled 21. The transport sector recorded its highest number of work stoppages in the last five years, with a 23.5 per cent increase compared with 1999 figures. While the bus and urban transit sector stood out clearly from the rest of the transport industry in 1999, with eight work stoppages recorded, or 47 per cent of the total labour actions, the water industry ranked first with 5 stoppages in 2000. The trucking and bus and urban transit industries each accounted for nearly one fifth of the total stoppages with four actions recorded. The air and taxi sectors recorded three stoppages each while there were two stoppages in the rail industry.

FIGURE 7-7: NUMBER OF WORK STOPPAGES AND WORKERS INVOLVED, 1996 – 2000



Source: Human Resources Development Canada

### NUMBER OF WORKERS INVOLVED

Although it ranked first in 2000 in terms of the number of labour actions, the water sector ranked second for the number of workers involved in work stoppages. The labour actions occurring in the rail sector implicated the highest number of workers, with over 1,500 workers

involved, making up to 45 per cent of the total in 2000. All transport sectors except the taxi industry recorded a decrease in the number of workers involved in stoppages in 2000.

### PERSON-DAYS LOST

The five stoppages reported in the water industry accounted for 35 per cent of the 57,570 person-days lost in 2000. Labour actions in Quebec accounted for 95 per cent of the person-days lost in the water sector and for close to 60 per cent of the losses in the truck sector. The truck and rail industries ranked second and third, with 16,350 and 7,390 person-days lost, respectively. Labour actions in the taxi industry accounted for 12 per cent of the losses. Quebec accounted for 51.3 per cent of all person-days lost due to labour actions in 2000. British Columbia and Ontario both reported over 5,000 person-days lost, in the rail and taxi sectors, respectively. Nova Scotia and Manitoba were not affected by labour actions in 2000.

Table 7-24 shows the number of stoppages, workers involved, and person-days lost due to labour actions in the transportation industry, for the period 1996 to 2000.

TABLE 7-24: LABOUR ACTION BY MODE OF TRANSPORT, 1996 – 2000

	1996	1997	1998	1999	2000
<b>Number of Stoppages</b>					
Air	1	7	3	1	3
Rail	1	0	1	3	2
Water	0	4	4	1	5
Truck	2	5	4	2	4
Bus/Urban	4	1	4	8	4
Taxi	2	1	0	2	3
<b>Total</b>	<b>10</b>	<b>18</b>	<b>16</b>	<b>17</b>	<b>21</b>
<b>Workers Involved</b>					
Air	147	1,177	2,693	265	165
Rail	502	0	25	2,130	1,654
Water	0	472	459	3,550	959
Truck	100	559	250	860	524
Bus/Urban	2,031	68	1,006	9,296	183
Taxi	49	7	0	24	164
<b>Total</b>	<b>2,829</b>	<b>2,283</b>	<b>4,433</b>	<b>16,125</b>	<b>3,649</b>
<b>Person-Days Lost</b>					
Air	600	51,420	33,840	8,520	4,480
Rail	2,150	0	180	7,080	7,390
Water	0	1,499	10,510	19,620	20,360
Truck	850	14,220	15,450	1,700	16,350
Bus/Urban	42,820	2,340	28,150	21,490	1,820
Taxi	3,440	850	0	110	7,170
<b>Total</b>	<b>49,860</b>	<b>70,329</b>	<b>88,130</b>	<b>58,520</b>	<b>57,570</b>

Source: Human Resources Development Canada

# TRANSPORTATION AND TRADE

# 8

*The growth of Canada's external trade once again surpassed that of domestic trade.  
Trade with the United States continued to be the driving force of this growth.*

In Canada, trade and transportation are intrinsically linked. Trade relies on transportation for moving goods within and between provinces, and shipping commodities to and receiving them from other countries. The growth and structure of trade influences not only the increase in transport demand, but also the choice of modes.

This chapter explores the direct influence of Canada's domestic and international trade on transportation, in particular from 1993 to 1999. The discussion of domestic trade looks at goods and services<sup>1</sup> moved within and between provinces.<sup>2</sup> The examination of international trade focuses on both the composition of goods and services carried, and the modal choice.

## DOMESTIC TRADE

### OVERVIEW

The value of domestic trade (goods and services) increased at an average annual rate of 4.7 per cent from 1993 to 1999, which equals a shift from \$1,104 billion to \$1,459 billion in current dollars. In terms of constant (1992) dollars, however, this annual average growth is only 3.2 per cent. When compared with that of external trade over the same period, this growth in domestic trade is moderate, which is explained later in the chapter.

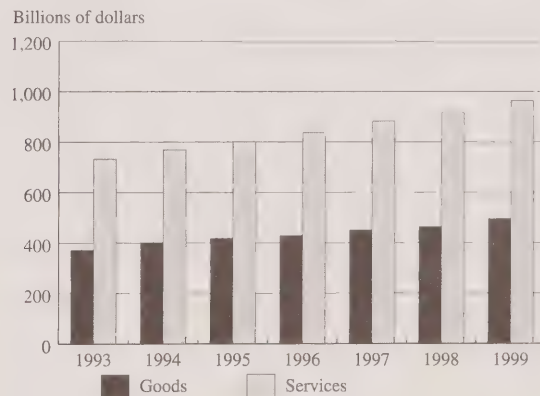
Services dominated domestic trade from 1993 to 1999, with a share almost twice that for goods: 66 per cent compared with 34 per cent. Over the period, the value of services traded increased from \$732 billion to

\$964 billion. In terms of sectors, intraprovincial trade remained the backbone of domestic trade, with a relatively constant 86 to 87 per cent of total domestic trade, while interprovincial trade levelled at 13 per cent.

Intraprovincial trade grew from \$966 billion in 1993 to \$1,270 billion in 1999, at an average annual growth rate of 4.6 per cent. Interprovincial trade flows grew at the higher average rate of 5.4 per cent, growing from \$138 billion to \$189 billion over the same period.

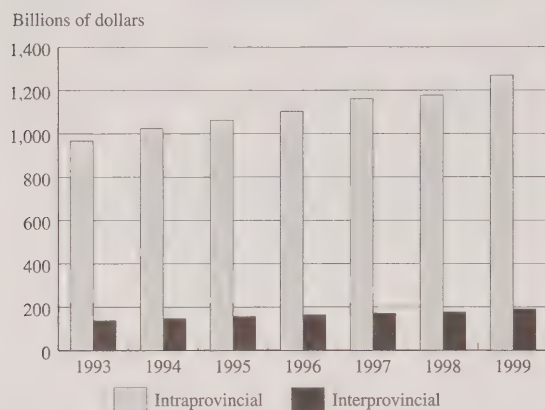
Figures 8-1 and 8-2 show Canada's domestic trade by type and sector from 1993 to 1999.

FIGURE 8-1: DOMESTIC TRADE BY TYPE, 1993 – 1999



Source: Statistics Canada, Input-Output Division

- <sup>1</sup> "Goods" consist of primary and manufactured products. "Services" refer to activities such as transportation and storage, communication services, wholesale and retail trade services, finance, insurance and real estate services, business and personal, and miscellaneous services.
- <sup>2</sup> Interprovincial trade flows are estimated using the provincial National Accounts Information System, which is based on inputs and outputs. Statistics Canada recently issued a new time series up to 1999, but it does not include a modal breakdown of the provincial trade flows.

**FIGURE 8-2: DOMESTIC TRADE BY SECTOR, 1993 – 1999**

Source: Statistics Canada, Input-Output Division

## COMPOSITION OF TRADE

Transportation needs are different for goods and services. The value of services rose from \$732 billion in 1993 to \$964 billion in 1999, with the vast majority (over 90 per cent) traded intraprovincially. Major domestic services were related to business and finance, the government sector, wholesale and retail trade, construction, and transportation.

Although they have a smaller share of domestic trade, the value of goods traded increased from \$372 billion to \$495 billion over the same period, representing an average annual growth of 4.9 per cent. Fabricated materials and manufactured goods captured approximately 80 per cent of total domestic trade, while primary goods and crude materials accounted for the rest. Over 75 per cent of total domestic trade in goods was intraprovincial.

Table 8-1 shows the value of domestic trade by sector and type of commodity in 1999.

**TABLE 8-1: DOMESTIC TRADE BY SECTOR, 1999**

Sectors	(Billions of dollars)			Goods' Share (per cent)	Services' Share (per cent)
	Goods	Services	Total		
Intraprovincial	387.6	882.1	1,269.7	31	69
Interprovincial	107.6	81.5	189.1	57	43
<b>Total</b>	<b>495.2</b>	<b>963.6</b>	<b>1,458.8</b>	<b>34</b>	<b>66</b>

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

## TRANSPORTATION BY MODE

With an average annual growth of 3.5 per cent, the volume of goods carried by various modes rose from 372 million tonnes in 1993 to 456 million tonnes in 1999. Rail had the greatest share, moving between 46 and 50 per cent of the total tonnage during the period. For-hire trucking<sup>3</sup> ranked second, increasing its share from 38 per cent to 43 per cent. Marine's share decreased from 13 to 11 per cent, while air carried less than one per cent.

Table 8-2 shows that 456 million tonnes were moved domestically in 1999. Raw materials and primary goods made up more than 56 per cent of this total, while manufactured goods accounted for the rest. As expected, rail and marine carried the most primary goods traded within the country, capturing 75 per cent of the market. For-hire trucking also garnered a high percentage, carrying 67 per cent of fabricated materials and manufactured goods. This share would undoubtedly be higher if the activities of small for-hire carriers, private trucking carriers and owner-operators could also all be taken into account.

**TABLE 8-2: DOMESTIC TRANSPORTATION FLOWS, 1999**

	(Millions of metric tonnes)				Total
	Rail <sup>1</sup>	Marine	For-hire Truck	Air	
Primary Products					
Grains	25.9	5.3	5.3		36.5
Forest products	18.9	10.0	33.5		62.4
Metallic ores	48.8	7.1	1.4		57.3
Non-metallic Minerals	22.6	11.9	15.8		50.3
Mineral fuels	38.0	3.6	7.9		49.4
Total	154.2	37.9	63.9		255.9
Manufactured products	49.6	15.0	134.5	0.5	199.6
<b>Total: All products</b>	<b>203.8</b>	<b>52.9</b>	<b>198.4</b>	<b>0.5</b>	<b>455.6</b>

Note: Traffic flows take into account movements of shipments i.e. either loadings or unloadings (No double counting).

1 Rail 1999 preliminary.

Source: Transport Canada, adapted from various Statistics Canada publications

In 1999, containerized freight accounted for approximately seven per cent of domestic rail tonnage and nearly one per cent of domestic marine tonnage. No specific measure was found for containerized freight handled by for-hire trucking.

Manufacturing shipments could be used as a general indicator of trucking activity. In 1999, manufacturing shipments rose by 9.4 per cent to reach \$491 billion, compared with gains of 3.2 per cent in 1998 and

3 For-hire trucking includes Class I and II carriers earning annual intercity revenues of \$1 million or more, as defined by Statistics Canada in the "Quarterly For-Hire Trucking (Commodity Origin/Destination) Survey." Courier and messenger service, private carrier and owner-operator activities are excluded from the survey.



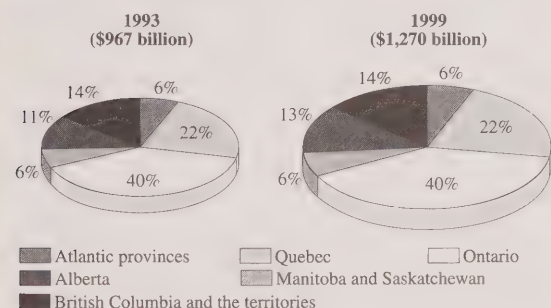
6.9 per cent in 1997. Performance in 2000 was similar to 1999, with manufacturing shipments rising again by nine per cent to settle at \$535 billion. These gains in 1999 and 2000 were the strongest seen by manufacturers since 1995, when shipments increased by 12.5 per cent.

## INTRAPROVINCIAL TRADE

With a constant share of over 85 per cent, intraprovincial trade made up the bulk of total domestic trade value from 1993 to 1999. In 1999, intraprovincial trade amounted to \$1,270 billion, including \$882 billion in services and \$388 billion in goods traded.

Figure 8-3 shows that distribution of intraprovincial trade by province did not vary significantly from 1993 to 1999. Ontario dominated with close to 40 per cent of Canada's total intraprovincial trade. Quebec ranked second with 22 per cent, followed by British Columbia and the territories at 14 per cent. Alberta came next with 13 per cent, followed by Manitoba and Saskatchewan, sharing six per cent, and the Atlantic provinces, also sharing six per cent.

FIGURE 8-3: INTRAPROVINCIAL TRADE BY PROVINCE, 1993 AND 1999



Source: Statistics Canada, Input-Output Division

Table 8-3 shows that rail and for-hire trucking filled most of the transportation needs generated by intraprovincial trade in 1999. In fact, trucking's share is probably larger than indicated here, as data on small for-hire, owner-operators and private carriers are only partially captured.

TABLE 8-3: DOMESTIC TRANSPORTATION FLOWS, BY SECTOR AND MODE, 1999

Sectors	(Millions of tonnes)				
	Rail <sup>1</sup>	Marine	For-hire Truck	Air	Total
Intraprovincial	85.4	34.0	150.6	N/A	270.0
Interprovincial	118.4	18.9	47.8	N/A	185.1
Total:	203.8	52.9	198.4	0.5	455.6

Notes: N/A = Non Available

Traffic flows take into account movements of shipments, i.e. either loadings or unloadings (no double counting).

<sup>1</sup> Rail 1999 preliminary (estimated).

Source: Transport Canada, adapted from various Statistics Canada data

## INTERPROVINCIAL TRADE

As mentioned previously, interprovincial trade represented less than 15 per cent of total domestic trade value from 1993 to 1999, which is a relatively small share. It is, however, an important component of domestic trade because it shows economic interactions between provinces, as well as the changes in these interactions. Interprovincial trade amounted to \$189 billion in 1999, distributed between goods traded at \$108 billion and services at \$81 billion.

Finance and business, wholesale and retail trade, and transportation were the major services traded between provinces, while food products, machinery and equipment, and mineral fuels were the major goods traded. Table 8-3 shows that rail and for-hire trucking carried over 85 per cent of total interprovincial tonnage in goods moved between provinces in 1999.

## MAIN EAST-WEST ROUTES

In 1999, six interprovincial trade flows of \$10 billion or more represented 53 per cent of total interprovincial trade. Valued at \$54 billion, or 29 per cent of total trade between provinces, the two largest movements were between Ontario and Quebec. Ontario to Quebec flows totalled \$30 billion, while the reverse flows amounted to \$24 billion. Other large movements involved Ontario to Alberta at \$14 billion, followed by Ontario to British Columbia at \$12 billion, Ontario to Atlantic provinces at \$11 billion, and Alberta to Ontario at \$10 billion. These dominant flows were stable from 1993 to 1999.

Table 8-4 shows the main interprovincial trade markets and underlines the strong linkages between neighbouring provinces. Ontario was the only province to show an interprovincial trade surplus for all years.

Figures 8-4 and 8-5 illustrate primary interprovincial trade flows in 1999.



**TABLE 8-4: INTERPROVINCIAL TRADE, MAIN EAST-WEST ROUTES, 1999**

(Billions of dollars)

<i>Routes (from/to)</i>	<i>Trade Value</i>	<i>Total two-way</i>	<i>Share in per cent</i>
Ontario/Quebec	29.9	53.8	28.5
Quebec/Ontario	23.9		
Ontario/Alberta	13.6	23.7	12.5
Alberta/Ontario	10.1		
Ontario/British Columbia	11.7	16.1	8.5
British Columbia/Ontario	4.4		
Ontario/Manitoba and Saskatchewan	8.8	15.0	7.9
Manitoba and Saskatchewan/Ontario	6.2		
Ontario/Atlantic provinces	10.6	14.2	7.5
Atlantic provinces/Ontario	3.6		
Alberta/British Columbia	6.9	13.3	7.0
British Columbia/Alberta	6.4		
Alberta/Manitoba and Saskatchewan	5.8	10.1	5.3
Manitoba and Saskatchewan/Alberta	4.3		
Quebec/Atlantic provinces	5.8	9.3	4.9
Atlantic provinces/Quebec	3.5		
Quebec/Alberta	4.1	6.8	3.6
Alberta/Quebec	2.7		
Quebec/British Columbia	3.9	6.0	3.2
British Columbia/Quebec	2.1		
Subtotal:		168.3	89.0
Other Routes		20.8	11.0
<b>Total Interprovincial Trade</b>		<b>189.1</b>	<b>100.0</b>

Note: No double counting as the exports of one province are the imports of another.  
Interprovincial trade includes value of goods and services.

Source: Transport Canada, adapted from Statistics Canada, Input-Output Division

**FIGURE 8-4: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, ONTARIO AS ORIGIN, 1999**

Source: Transport Canada

**FIGURE 8-5: INTERPROVINCIAL TRADE, MAIN TRADE FLOWS, OTHER REGIONS AS ORIGIN, 1999**

Note: Other regions excludes Ontario as origin.

Source: Transport Canada

## INTERNATIONAL TRADE

### OVERVIEW

Comparing east-west interprovincial trade flows with north-south international trade flows reveals the increasing importance of outside markets to provincial economies. From 1993 to 1999, international exports and imports grew at an average annual rate of 10.9 per cent and 9.5 per cent, respectively. These rates doubled the average growth of 5.4 per cent experienced in interprovincial trade during the same period.

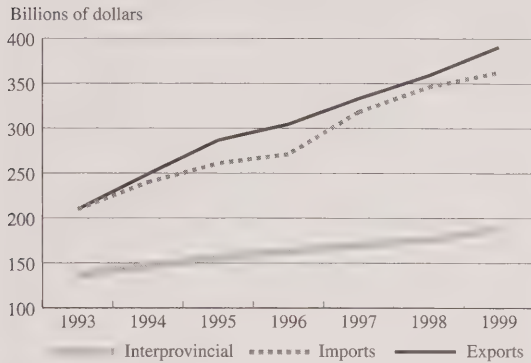
In 1999, exports and imports, including goods and services, amounted to \$391 billion and \$362 billion, respectively, while interprovincial flows reached \$189 billion.

Figure 8-6 indicates trends in interprovincial trade versus exports and imports from 1993 to 1999.

### COMPOSITION OF EXPORTS AND IMPORTS

Goods were the main component of international trade from 1993 to 1999, with a share ranging from 82 to 84 per cent. Services accounted for the rest. In 1999, Canada traded an estimated \$629 billion in goods and an estimated \$124 billion in services at the international level.

FIGURE 8-6: TRENDS — INTERPROVINCIAL TRADE VERSUS EXPORTS AND IMPORTS, 1993 – 1999

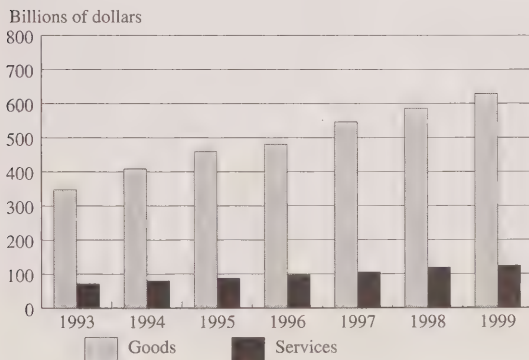


Source: Statistics Canada, Input-Output Division

From 1993 to 1999, 90 per cent of goods traded internationally were manufactured products and fabricated materials, with the share of primary goods and raw materials falling from 11 to eight per cent over the period. Services traded internationally were business and finance, transportation, trade wholesaling, and personal/miscellaneous services.

Figure 8-7 illustrates Canada's external trade by type from 1993 to 1999.

FIGURE 8-7: INTERNATIONAL TRADE BY TYPE, 1993 – 1999



Source: Statistics Canada, Input-Output Division

## TRADE FLOWS AND MODAL CHOICE

The following sections will examine the relation between trade flows and the choice of modes in two ways: trade of goods between Canada and the United States, and Canada's trade with other countries.

## CANADA-US TRADE

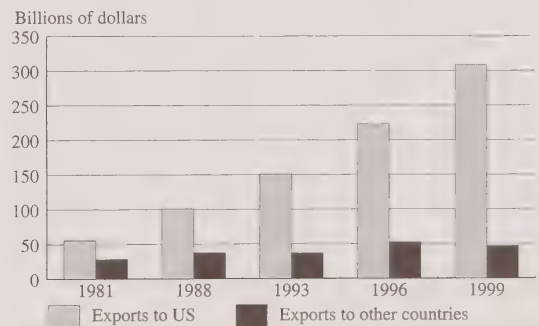
### IMPACT OF CANADA-US TRADE

Canada's trade with the United States exerts a powerful influence over economic and trade activity performance in Canada. In the last 20 years, the share of exports to the United States has risen from 66 per cent of Canada's total exports in 1981 to 87 per cent in 1999. Preliminary figures for 2000 establish the share of exports to the United States at 87 per cent of total Canadian exports.

From 1993 to 1999, exports to the United States grew at an average annual rate of 12.9 per cent, more than *three times* the average growth rate of 4.2 per cent experienced in Canada's exports to other countries. Canada's exports to the United States went from \$151 billion to \$308 billion over the period, while exports to other countries levelled at \$47 billion in 1999, compared with \$37 billion in 1993. The modest performance in exports to other countries is partially explained by the Asian and Latin American currency crises in 1998, followed by the recession and slow recovery in 1999 that took a heavy toll on the economies in these regions. Preliminary figures in 2000 show a more robust growth rate for Canada's exports to these countries.

Figure 8-8 shows the importance of the United States in Canada's exports during the past two decades.

FIGURE 8-8: US IMPORTANCE IN CANADA'S EXPORTS, 1981 – 1999



Source: Statistics Canada, Cat. 65-202

For the past 20 years, Canada's imports from the United States have been relatively stable, oscillating between 65 and 69 per cent of Canada's total imports. Preliminary figures for 2000 show that the share of imports from the United States has decreased to 64 per cent. From 1993 to 1999, both imports from the United States and other countries showed an average annual growth rate of 11 per cent.

## MODAL SPLIT

In 1999, trucking dominated transborder trade, with 60 per cent of total exports moved to the United States, valued at \$185 billion, and 81 per cent of all imports from the United States, valued at \$175 billion. From 1993 to 1999, trucking's share increased from 58 to 60 per cent of exports, while remaining stable in imports at 79 to 82 per cent. Rail ranked second, with 22 to 24 per cent of exports over the period, but only eight to nine per cent of total imports. The pipeline mode, included in "Other" mode, ranked third in carrying exports to the United States, while air registered a slight increase in its share of both exports and imports, ranking second for imports over the period.<sup>4</sup>

On a tonnage basis, the pipeline mode ranked first, moving between 41 and 45 per cent of the total tonnes exported to the United States. Trucking came next with 21 to 24 per cent, followed closely by rail at 18 to 19 per cent, and marine at 16 to 17 per cent. In 1999, nearly 308 million tonnes were moved to the United States. On the import side, the trucking and marine modes dominated, with 49 and 33 per cent of total tonnage imported from the United States respectively. In 1999, over 106 million tonnes were shipped to Canada from the United States.

Table 8-5 examines the value of Canada's exports to and imports from the United States by mode and sector from 1993 to 1999, and looks at the number of tonnes during the same period.

## CANADA-US TRADE BY REGION

Ontario captured nearly 66 per cent of Canada's trade with the United States in 1999, accounting for \$183 billion in exports and \$161 billion in imports. Quebec came next at 14 per cent, followed by Alberta at seven per cent and British Columbia at six per cent. These four provinces accounted for more than 90 per cent of all trade with the United States in 1999, a scenario that was constant from 1993 to 1999. All Canadian provinces, except Manitoba and the Yukon territory, registered a positive trade balance with the United States, with their exports exceeding their imports. Table 8-6 shows Canada's trade with the United States by province.

On the US side, all regions<sup>5</sup> recorded a negative balance with Canada, except the South, which shipped

**TABLE 8-5: CANADA-US TRADE BY MODE AND SECTOR, 1993 - 1999**

<i>Year</i>	<i>Billions of dollars</i>	<i>Share in per cent</i>				
		<i>Road</i>	<i>Rail</i>	<i>Marine</i>	<i>Air</i>	<i>Other</i>
<b>Exports<sup>1</sup></b>						
1993	150.7	57.6	24.4	2.9	4.5	10.6
1995	207.8	57.5	25.1	3.3	4.7	9.4
1997	243.9	59.7	22.1	2.8	5.0	10.5
1999	308.1	60.2	22.8	2.2	5.7	9.1
<b>Imports</b>						
1993	113.8	81.9	8.5	1.6	7.5	0.5
1995	150.7	80.1	9.5	1.5	8.6	0.3
1997	184.3	79.2	9.6	1.5	9.2	0.6
1999	215.4	81.1	7.8	1.3	9.4	0.4

<i>Year</i>	<i>Million tonnes<sup>2</sup></i>	<i>Share in per cent</i>				
		<i>Road</i>	<i>Rail</i>	<i>Marine</i>	<i>Air</i>	<i>Other</i>
<b>Exports</b>						
1993	221.8	20.8	18.9	16.8	0.1	43.4
1995	271.7	20.1	17.8	16.7	0.2	45.2
1997	294.4	21.0	18.1	17.1	0.1	43.6
1999	307.5	24.0	19.0	16.3	0.2	40.6
<b>Imports</b>						
1993	N/A	N/A	N/A	N/A	N/A	N/A
1995	77.4	47.2	14.9	35.2	1.4	1.3
1997	98.6	49.9	13.3	32.1	1.0	3.7
1999	106.2	49.2	13.6	33.4	0.9	2.8

Note: N/A = Not Available

1 Total exports including domestic exports and re-exports.

2 Tonnes estimated based on weight conversion factors developed by Statistics Canada

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations. Transport Canada, adapted from Statistics Canada

**TABLE 8-6: CANADA-US TRADE BY PROVINCE, 1999**

(Billions of dollars)

	Exports	Imports	Total	Share in per cent
Ontario	182.8	160.6	343.4	65.6
Quebec	52.6	20.9	73.5	14.0
Alberta	29.4	7.6	37.0	7.1
British Columbia	20.2	12.5	32.7	6.3
Manitoba	6.6	7.1	13.7	2.6
Saskatchewan	5.7	3.7	9.4	1.8
New Brunswick	5.2	2.1	7.3	1.4
Nova Scotia	3.1	0.7	3.8	0.7
Newfoundland	2.0	0.1	2.1	0.4
Prince Edward Island	0.5	0.0	0.5	0.1
Yukon and Northwest Territories	0.0	0.1	0.1	0.0
<b>Total</b>	<b>308.1</b>	<b>215.4</b>	<b>523.5</b>	<b>100.0</b>

Note: Trade includes total exports and imports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

4 More than one mode of transportation might be used to carry traded goods from origin to destination. For exports, the mode of transportation indicates the mode by which the international boundary is crossed. For imports, the mode of transportation represents the last mode by which the cargo was transported to the port of clearance in Canada. This may not be the mode by which the cargo arrived at the Canadian port of entry in the case of inland clearance. This may lead to some underestimation of Canadian imports by the marine and air modes.

5 The four US regions include the US Central, i.e. the states bordering the Great Lakes (Central East) as well as North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West); the US North East, which refers to the New England and Atlantic states, including New Jersey, New York and Pennsylvania; the US South, which includes southern states from the Atlantic coast to the Gulf of Mexico; and the US West, which includes US mountain and Pacific states. Data related to unknown states were left in a residual category called "US Other."



more goods to Canada than it received. This pattern has been prevalent for the last 10 years. In 1999, the US Central region dominated US trade with Canada, with \$222 billion, or 42 per cent of the trade (\$127 billion from Canada and \$95 billion to Canada). The North East region ranked second with \$117 billion, or 22 per cent of the trade, followed by the South at \$102 billion and the West at \$75 billion.

From 1989 to 1999, two US regions increased their shares of trade with Canada: The South moved from 17 per cent to 20 per cent, and the West moved from 12 per cent to 14 per cent. Canada's increased trade with the US South was largely carried by trucking, whose share rose from 64 per cent to 69 per cent of total trade over the period. The rising trade with the US West was still dominated by the trucking mode, increasing its share from 52 per cent to 55 per cent; followed by air, increasing from 14 to 18 per cent; and rail, increasing from 14 to 16 per cent.

Table 8-7 shows transborder trade by US region for 1989 and 1999.

**TABLE 8-7: CANADA-US TRADE BY US REGION, 1989 AND 1999**

	(Billions of dollars)		Share in per cent	
	1989	1999	1989	1999
US Central	87.9	221.8	46.4	42.4
US North East	45.6	116.7	24.1	22.3
US South	31.8	102.2	16.8	19.5
US West	22.5	75.1	11.9	14.4
US Other <sup>1</sup>	1.5	7.7	0.8	1.4
<b>Total</b>	<b>189.3</b>	<b>523.5</b>	<b>100.0</b>	<b>100.0</b>

Note: Trade includes total exports and imports.

<sup>1</sup> US Other includes residual unspecified data.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations

## PREFERRED MODE AND COMMODITY MIX

As noted previously, trucking dominated Canada-US trade in 1999, carrying 60 per cent of exports in value and 24 per cent in tonnage, and over 80 per cent of imports in value and near 50 per cent in tonnage. In addition, Canada-based for-hire trucking carriers have been carrying goods over greater distances. From 1989 to 1999, the average distance by tonne carried kept rising by an annual average rate of 2.4 per cent for exports (from 825 to 1,047 kilometres) and at an average rate of 1.6 per cent for imports<sup>6</sup> (from 948 to 1,240 kilometres).

The number of trucks crossing Canada-US border points has also continued to rise. From 1991 to 2000, trucks moving across the border increased at an average annual rate of 7.4 per cent, increasing from 19,680 vehicles to 37,360 vehicles on a daily basis.<sup>7</sup> The share of daily crossings for trucks belonging to Canadian firms rose from 57 per cent to 68 per cent over the same period.

In 1999, exports to the United States moved by trucks totalled \$185 billion. Trucks dominated the carriage of all product categories except mineral fuels, petroleum products and metallic ores. They carried 54 per cent of all automobile products (valued at \$45 billion) shipped to the US, 80 per cent of all machinery and equipment products (\$22 billion), 88 per cent of all food products (\$13.6 billion), 74 per cent of all electrical/electronic material and equipment (\$13.4 billion) and more than 60 per cent of all paper products (\$12.8 billion). Canada's imports trucked from the United States amounted to \$175 billion in 1999.

## MAJOR CANADA-US TRADE FLOWS

In 1999, Canada's trade with the United States included 17 two-way trade flows worth at least \$10 billion each, representing over 80 per cent of all Canada-US trade. The trucking mode was dominant, capturing a 50 per cent share or more in 14 of them. Ontario was involved in eight of these trade flows, including the largest four flows, which totalled \$272 billion, or 52 per cent of total transborder trade.

The largest trade flow was between Ontario and the US states bordering the Great Lakes, accounting for a 30 per cent share, with exports of \$85 billion and imports of \$73 billion.

The automobile products trade dominated Ontario's exports, which went mostly to Michigan and were valued at \$53 billion. Of these, 57 per cent were carried by trucks, while 43 per cent were carried by rail. Likewise, Ontario's imports consisted mainly of automobile products, valued at \$29 billion, and machinery or equipment products, valued at \$17 billion. In both cases, trucking moved over 90 per cent of these commodities.

Table 8-8 indicates major trade flows between Canada and the United States in 1999, showing the modal breakdown for each.

Figures 8-9 and 8-10 illustrate the major Canada-US trade flows involving Ontario and other provinces.

6 Based on Statistics Canada, "Quarterly For-hire Trucking (Commodity Origin/Destination) Survey."

7 Adapted by Transport Canada, from Statistics Canada, International Travel Section, Tables 1A and 1B.



**TABLE 8-8: CANADA-US TRANSBORDER TRADE SHOWING MAIN NORTH-SOUTH TRADE FLOWS, 1999**

(Billions of dollars)

Canadian Region	US Region	Exports from Canada	Imports to Canada	Share in Total trade	Main modes used Per cent	(Per cent of total value)
Ontario	US Central East	85.4	73.3	158.7	30	Road (79), Rail (19)
Ontario	US Middle Atlantic	33.1	21.3	54.3	10	Road (77), Rail (17)
Ontario	US Pacific	19.9	9.9	29.7	6	Road (54), Rail (24)
Ontario	US South Atlantic	12.3	17.0	29.2	6	Road (81), Rail (10)
Quebec	US Middle Atlantic	14.2	4.5	18.7	4	Road (77), Air (12)
Ontario	US South Central	6.3	11.4	17.8	3	Road (81), Rail (16)
Ontario	US Central West	7.7	9.2	16.8	3	Road (76), Rail (14)
British Columbia	US Pacific	9.5	6.5	16.0	3	Road (69), Pipeline (11)
Ontario	US South West	6.0	9.9	15.9	3	Road (71), Rail (16)
Quebec	US New England	8.7	5.2	13.9	3	Road (86), Rail (5)
Prairies	US Central East	8.8	4.3	13.1	3	Road (41), Pipeline (37)
Quebec	US Central East	10.1	2.2	12.3	2	Road (55), Rail (34)
Prairies	US Central West	8.3	3.2	11.5	2	Road (58), Pipeline (26)
Ontario	US New England	6.4	4.8	11.2	2	Road (76), Air (16)
Quebec	US South Atlantic	7.3	2.9	10.2	2	Road (65), Air (17)
Prairies	US Pacific	7.3	2.0	9.3	2	Road (40), Pipeline (34)
Prairies	US Middle Atlantic	6.1	1.5	7.6	1	Road (32), Pipeline (47)
<b>Subtotal:</b>		<b>257.3</b>	<b>189.0</b>	<b>446.3</b>	<b>85</b>	
Other		50.8	26.4	77.2	15	
<b>Total Canada-US trade:</b>		<b>308.1</b>	<b>215.4</b>	<b>523.5</b>	<b>100</b>	

Note: US Central includes the states bordering the Great Lakes (Central East) and those of North Dakota, South Dakota, Nebraska, Kansas, Iowa, Minnesota and Missouri (Central West);  
 US North East refers to New England states and Middle Atlantic states such as New Jersey, New York, and Pennsylvania;  
 US South includes southern states from the Atlantic coast to the Gulf of Mexico; and  
 US West refers to US mountain states and Pacific states.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

**FIGURE 8-9: CANADA-US TRADE, MAIN ONTARIO TRADE FLOWS, 1999**

(Billions of dollars)



Source: Transport Canada

**FIGURE 8-10: CANADA-US TRADE, MAIN CANADIAN REGIONS TRADE FLOWS, 1999**

(Billions of dollars)



Note: Excluding Ontario.

Source: Transport Canada

Many internal and external factors affect the growth of Canada's trade with the United States. Among these are the gradual reduction of tariffs on goods as a result of trade agreements and dollar exchange rate fluctuations. From 1988 to 1999, the share of duties collected on total goods imported from the US decreased steadily, from 2.6 per cent to 0.1 per cent.<sup>8</sup> As for exchange rate

fluctuations, these have made Canadian goods relatively less expensive to American consumers for the last 10 years.

Table 8-9 shows exchange rates for Canadian dollars for selected years between 1989 and 2000.

8 Adapted by Transport Canada, from Statistics Canada, International Trade database, 1988-99.

**TABLE 8-9: EXCHANGE RATES, CANADIAN DOLLARS PER SELECTED CURRENCY**

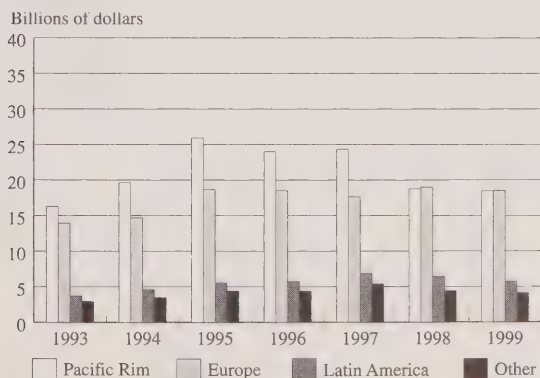
	US Dollar	British Pound	German Mark	Japan Yen ('000s)
1989	1.184	1.941	0.631	8.60
1993	1.290	1.938	0.781	11.65
1995	1.372	2.166	0.959	14.68
1998	1.484	2.459	0.845	11.40
1999	1.486	2.404	0.811	13.11
2000	1.485	2.250	0.701	13.78

Source: Statistics Canada, Cat. 11-010

## CANADA'S TRADE WITH OTHER COUNTRIES

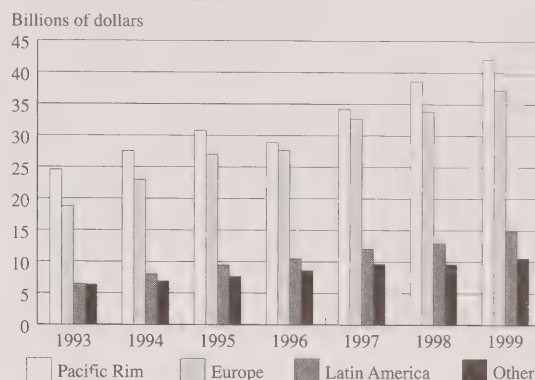
### OVERVIEW

Although less significant than trade with the United States, Canada's trade with countries other than the United States is still worthy of discussion. From 1993 to 1999, imports from countries other than the United States represented 32 to 33 per cent of Canada's total imports. Exports to those same countries accounted for only 13 per cent of Canada's total exports in 1999, down from 20 per cent in 1993. The export situation is partially explained by the financial crisis and recessions that hit the Asian and Latin American economies in 1998 and their sluggish recovery in 1999. Canada's exports to countries other than the United States grew by an average annual rate of only 4.2 per cent over the period. Canada's imports from these countries were more robust with an average annual growth of 11 per cent from 1993 to 1999.

**FIGURE 8-11: EXPORTS TO NON-US COUNTRIES, 1993 – 1999**

Source: Statistics Canada, International Trade Division

Figures 8-11 and 8-12 illustrate Canada's trade with countries other than the United States from 1993 to 1999.

**FIGURE 8-12: IMPORTS FROM NON-US COUNTRIES, 1993 – 1999**

Source: Statistics Canada, International Trade Division

### TRADE BY MODE

As in previous years, marine and air were the primary modes to carry Canada's trade with countries other than the United States. From 1993 to 1999, the marine share of total exports to these countries decreased slightly from 73 per cent to 71 per cent, while the air share rose from 17 to 21 per cent. Air exports to these countries grew at an average annual rate of 7.6 per cent over the period, increasing from \$6 billion in 1993 to almost \$10 billion in 1999.

The modal picture on imports might be somewhat more confusing.<sup>9</sup> For example, marine dominated Canada's imports from countries other than the United States although apparently lost its strong share. Trucking ranked second, while air imports were third with a share that soared from 17 per cent to 23 per cent from 1993 to 1999. The trucking figure is probably overestimated<sup>10</sup> because part of it covers transshipment via the United States, with the rest distributed between the marine and air modes.

The air mode's increasing share indicates a growing trend toward moving high-valued trade commodities, such as electronic and telecommunications equipment, by air. From 1993 to 1999, machinery and equipment products moved from other countries by air increased at an average annual rate of 16 per cent, while electric/electronic machinery or equipment increased by 29 per cent.

9 Truck and rail information can be used to estimate the importance of Canada's trade with countries other than the United States, routed through the United States. With imports, however, such an estimate is more difficult to determine, as customs cargo control documents information may lead to some underestimation of Canadian imports by the marine and air modes.

10 Please see notes 4 and 9.

In terms of tonnage, modal breakdown of Canada's trade with countries other than the United States is completely marine-oriented. In 1999, 182 million tonnes were shipped from Canada to non-US countries, including 98 per cent using the marine mode. Approximately 70 million tonnes were shipped to Canada from those other countries, 84 per cent of which involved water.

Table 8-10 shows the value and tonnage of Canada's trade with countries other than the United States by mode and sector between 1993 and 1999.

**TABLE 8-10: CANADA-NON-US COUNTRIES TRADE BY MODE AND SECTOR, 1993 – 1999**

<i>Year</i>	<i>Billions of dollars</i>	<i>Share in per cent</i>				
		<i>Road</i>	<i>Rail</i>	<i>Marine</i>	<i>Air</i>	<i>Other</i>
<b>Exports<sup>1</sup></b>						
1993	\$36.9	9.2	1.1	72.6	17.1	0.0
1995	54.5	9.4	1.2	74.0	15.4	0.0
1997	54.2	9.1	1.7	72.8	16.4	0.0
1999	46.8	6.6	1.7	70.9	20.8	0.0
<b>Imports</b>						
1993	\$56.1	26.1	3.9	50.8	16.6	2.7
1995	74.9	25.1	3.7	49.7	19.5	1.9
1997	88.5	31.3	4.5	40.1	22.0	2.1
1999	104.7	34.7	3.3	38.2	23.3	0.5

<i>Year</i>	<i>Million tonnes<sup>2</sup></i>	<i>Share in per cent</i>				
		<i>Road</i>	<i>Rail</i>	<i>Marine</i>	<i>Air</i>	<i>Other</i>
<b>Exports</b>						
1993	143.4	0.9	0.2	98.6	0.3	0.0
1995	172.0	1.3	0.3	98.1	0.4	0.0
1997	189.9	1.0	0.2	98.4	0.4	0.0
1999	182.3	1.7	0.3	97.7	0.3	0.0
<b>Imports</b>						
1993	N/A	N/A	N/A	N/A	N/A	N/A
1995	59.5	5.4	1.2	78.8	0.9	13.7
1997	71.3	6.6	1.0	79.4	0.9	12.2
1999	69.6	9.1	1.3	83.5	1.3	4.8

Note: N/A = Not Available

1 Total exports including domestic exports and re-exports.

2 Tonnes estimated based on weight conversion factors developed by Statistics Canada.

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations. Transport Canada, adapted from Statistics Canada

## DIRECTION OF TRADE FLOWS

From 1993 to 1997, exports to countries other than the United States originated almost equally from eastern and western provinces, at 51 per cent and 49 per cent, respectively. Beginning in 1998, however, eastern provinces accounted for a larger proportion of exports with 54 per cent. This change reflects decreased exports to Pacific Rim countries, which were primarily shipped from the western provinces. Ontario, Quebec and British Columbia were the main provinces of origin for exports shipped to overseas countries. In 1999, over 80 per cent of total exports to overseas countries originating from western provinces were shipped through British Columbia gateway (\$17.3 billion), mainly Vancouver which captured 86 per cent of this total.

In terms of the import of goods, more than 80 per cent of commodities shipped to Canada by overseas countries came through the eastern provinces, mainly Ontario at 50.8 per cent. This trend was constant from 1993 to 1999. Canada had a negative trade balance with most countries other than the United States. In 1999, exports to these countries totalled \$47 billion, while imports totalled \$105 billion. Preliminary figures for 2000 show the same imbalance, with exports valued at \$50 billion and imports valued at \$127 billion.

Table 8-11 shows the provinces' shares of Canada's trade with countries other than the United States in 1999.

**TABLE 8-11: CANADA'S TRADE WITH NON-US COUNTRIES BY PROVINCE, 1999**

	(Billions of dollars)			
	Exports	Imports	Total	Share in per cent
Ontario	12.7	50.8	63.5	41.9
Quebec	9.5	27.6	37.1	24.5
British Columbia	9.5	14.7	24.2	16.0
Alberta	5.4	2.7	8.1	5.3
Nova Scotia	1.0	3.9	4.9	3.2
Saskatchewan	4.3	0.5	4.8	3.2
New Brunswick	1.0	2.1	3.1	2.0
Manitoba	1.5	1.2	2.7	1.8
Newfoundland	1.0	1.2	2.2	1.5
Yukon and Northwest Territories	0.9	0.0	0.9	0.6
Prince Edward Island	0.0	0.0	0.0	0.0
<b>Total</b>	<b>46.8</b>	<b>104.7</b>	<b>151.5</b>	<b>100.0</b>

Note: Total exports by province of origin; imports by province of clearance.

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations

## MAJOR TRADE FLOWS

In 1999, five major trade flows worth at least \$10 billion each represented 68 per cent of all trade between Canada and countries other than the United States. Three of these flows involved eastern provinces and three were import movements. For export movements, major flows were from the eastern provinces to European countries, with \$13.7 billion, and from the western provinces to Pacific Rim countries, with \$12.8 billion. For import movements, major flows were from European countries to the eastern provinces, with \$33.9 billion; Pacific Rim countries to the eastern provinces, with \$28.9 billion; and Pacific Rim countries to the western provinces, with \$13.2 billion.

The largest trade flow involved goods moving from European countries to the eastern provinces, with a total value of \$34 billion. Marine captured 49 per cent of this flow with an approximate value of \$17 billion, made up mainly of mineral fuels and petroleum products worth \$4.2 billion, machinery and equipment worth \$2.6 billion, automobile products with \$2 billion and food products at \$1.9 billion. Imports by air amounted to \$11 billion, or



33 per cent of the trade flow. End manufactured products, with a total value of \$4.2 billion, and machinery/equipment products including electronic components, with a value of \$4.1 billion, were the main shipments by air.

The second largest flow was goods shipped from Pacific Rim countries to the eastern provinces, which amounted to \$29 billion. Three modes were the major carriers on this route: trucking at \$11.4 billion, or 39 per cent of total shipments; marine at \$8.8 billion, or 30 per cent; and air at \$7.6 billion, or 26 per cent. Three commodity groupings represented the bulk of this trade flow: machinery/equipment products valued at \$7.5 billion, electrical and electronic material equipment valued at \$7.3 billion and manufactured end-products valued at \$7.2 billion. Electronic materials were shipped mainly by air, while manufactured products were shipped by marine. As mentioned previously, the road share is overestimated,<sup>11</sup> as part of it covers transshipment via the United States, with the rest feeding the marine and air modes.

Tables 8-12 and 8-13 show the major trade flows between Canada and countries other than the United States in 1999.

**TABLE 8-12: CANADA'S EXPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999**

(Billions of dollars)

Exports to:	Origin		Total	Main modes used (Per cent of total value)
	Eastern provinces	Western provinces		
Europe	13.7	4.8	18.5	Marine (65), Air (32)
Pacific Rim <sup>1</sup>	5.7	12.8	18.5	Marine (82), Air (13)
Latin America <sup>2</sup>	2.7	1.4	4.1	Marine (60), Road (22)
Mexico	1.0	0.6	1.6	Marine (31), Road (42)
Other	2.1	2.0	4.1	Marine (76), Air (17)
<b>Total</b>	<b>25.2</b>	<b>21.6</b>	<b>46.8</b>	

1 Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.

2 Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

**TABLE 8-13: CANADA'S IMPORT TRADE WITH NON-US COUNTRIES BY MAIN TRADE FLOWS, 1999**

(Billions of dollars)

Imports from:	Destination		Total	Main modes used (Per cent of total value)
	Eastern provinces	Western provinces		
Pacific Rim <sup>1</sup>	28.9	13.2	42.1	Marine (39), Road (37)
Europe	33.9	3.3	37.2	Marine (47), Air (33)
Mexico	8.6	0.9	9.5	Road (74), Rail (16)
Latin America <sup>2</sup>	4.8	0.5	5.3	Marine (44), Road (39)
Other	9.4	1.2	10.6	Road (46), Marine (32)
<b>Total</b>	<b>85.6</b>	<b>19.1</b>	<b>104.7</b>	

1 Including Oceania and Asian countries, except Bangladesh, Sri Lanka, Maldives, India, and Pakistan.

2 Including Antilles, South and Central American countries except Mexico.

Source: Transport Canada, adapted from Statistics Canada, International Trade Division

<sup>11</sup> Please see notes 4 and 9.

Figures 8-13 and 8-14 illustrate Canada's main trade flows with overseas countries in 1999.

**FIGURE 8-13: EXPORTS TO NON-US COUNTRIES, MAIN TRADE FLOWS, 1999**

(Billions of dollars)



Source: Transport Canada

**FIGURE 8-14: IMPORTS FROM NON-US COUNTRIES, MAIN TRADE FLOWS, 1999**

(Billions of dollars)



Source: Transport Canada

## RECENT TRENDS

In 1998, the world economy and trade were affected by financial crises and recessions that started in Japan and then spread to neighbouring Asian countries and Latin America. In 1999, the economies of these Asian and Latin American countries did not fully recover and remained sluggish. As a result, Canadian exports to Japan and Asian countries were significantly affected, declining by 23 per cent in 1998 and three per cent in 1999. Likewise, Canadian exports to South American countries registered two consecutive decreases, dropping 16 per cent and 27 per cent from their 1997 levels.



In 2000, the world economic climate was more optimistic. Canada's domestic exports to countries other than the United States registered a healthy increase of 12.5 per cent to reach \$50.4 billion, close to the high 1997 level of \$52 billion. Over the same time, domestic exports to the United States increased by 16.5 per cent.

On the import side, the situation reverses as Canada's imports from other countries increased faster than imports from the United States. In 1999, Canada's imports from countries other than the United States were strong, growing over 10 per cent compared with 1998, while imports from the United States rose by only 5.8 per cent. In 2000, the growth rate for imports from other countries soared to 21 per cent, while the rate for imports from the United States stayed at the 1999 level of 6.4 per cent. Consequently, Canada's imports from the United States accounted for 64 per cent of total Canadian imports, compared with 68 per cent two years before.

Tables 8-14 and 8-15 show Canada's exports and imports by major country groupings in 1999 and 2000.

**TABLE 8-14: CANADIAN EXPORTS BY COUNTRY GROUPINGS, 1999 AND 2000**

(Billions of dollars)

Destination	1999	2000	Growth rate (per cent)
US	286.6	333.8	16.5
Non-US countries	44.8	50.4	12.5
Japan	8.3	8.9	7.0
Other Asia	9.2	10.7	16.6
Mexico	1.5	1.9	28.5
Other Latin America <sup>1</sup>	3.8	3.9	3.9
Western Europe	16.8	19.3	14.7
Other <sup>2</sup>	5.2	5.6	8.3
<b>Total World</b>	<b>331.3</b>	<b>384.1</b>	<b>15.9</b>

Note: Preliminary data for 2000 Canadian domestic exports.

<sup>1</sup> Including Antilles, South and Central American countries, except Mexico.

<sup>2</sup> Including Oceania, Middle East, Africa and other Europe.

Source: Statistics Canada, Cat. 65-001 December 2000

**TABLE 8-15: CANADIAN IMPORTS BY COUNTRY GROUPINGS, 1999 AND 2000**

(Billions of dollars)

Origin	1999	2000	Growth rate (per cent)
US	215.5	229.3	6.4
Non-US countries	104.8	127.2	21.4
Japan	15.0	16.6	10.4
Other Asia	26.9	32.9	22.2
Mexico	9.5	12.1	26.6
Other Latin America <sup>1</sup>	5.3	6.4	19.5
Western Europe	35.8	42.8	19.8
Other <sup>2</sup>	12.2	16.3	34.4
<b>Total World</b>	<b>320.3</b>	<b>356.5</b>	<b>11.3</b>

Note: Preliminary data for 2000.

<sup>1</sup> Including Antilles, South and Central American countries, except Mexico.

<sup>2</sup> Including Oceania, Middle East, Africa and other Europe.

Source: Statistics Canada, Cat. 65-001 December 2000

# TRANSPORTATION AND TOURISM

# 9

*Spending on tourism in Canada reached \$50.1 billion in 1999, of which \$20.1 billion, or 40 per cent was spending on transportation.*

This chapter reviews two major aspects of transportation and tourism. First, it examines tourism spending in Canada by Canadians and foreign visitors, including spending on transportation. It also compares the value of spending by foreigners travelling in Canada against the value of spending by Canadians travelling outside Canada.

Second, it takes a broad overview of travel, including a look at both domestic and international travel by distribution, purpose and mode. This overview also includes sections on travel between Canada and the United States and between Canada and countries other than the United States.

"Tourism" in this chapter refers to people travelling to and staying in places outside their usual environment for leisure, business and other purposes for no longer than one year. For Canadians travelling within Canada, a trip must be at least 80 kilometres from the traveller's place of residence to be considered as tourist travel. International travel refers to travel to or from Canada. The United Nations World Tourism Organization, Statistics Canada and the Canadian Tourism Commission use this definition of tourism.

## TOURISM EXPENDITURES

### TOURISM SPENDING IN CANADA

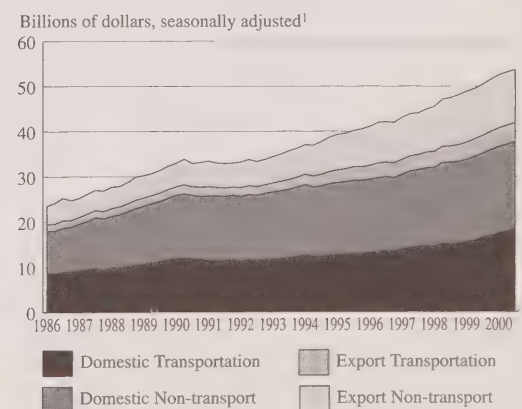
Tourism spending in Canada falls under two categories — spending by Canadians and spending by foreign visitors. Domestic expenditures relate to tourism spending by Canadians in Canada, while export expenditures (or tourism exports) relate to spending by foreign visitors in Canada.

Spending on tourism in Canada reached \$50.1 billion in 1999, up 6.5 per cent from 1998. This growth continued in 2000, with tourism expenditures in the first three quarters reaching \$19.5 billion, up 7.2 per cent from the same period in 1999. A rise in the price of fuel resulted in an increase in spending on transportation relative to spending on non-transportation. Figure 9-1 shows the trends in the distribution of tourism spending over the last 15 years.

### SPENDING ON TRANSPORTATION

Tourism expenditures on transportation totalled \$20.1 billion in 1999, up 8.5 per cent from 1998, when it rose five per cent over the previous year. The increase in the price of fuel was the main factor behind the increase in spending on transportation. Transportation spending accounted for 40.1 per cent of all tourism spending in 1999, up from 39.3 per cent in 1998.

FIGURE 9-1: TOURISM SPENDING IN CANADA, 1986 – 2000



<sup>1</sup> Quarterly data at annual rates.

Source: Statistics Canada, Cat. 13-009-XPB

Spending on air transportation was \$11.6 billion, an 9.6 per cent increase from 1998. It made up 57.7 per cent of total transportation tourism spending. Tourism spending on motor vehicle transportation made up 34.5 per cent of the total in 1999. The amount spent on vehicle fuel rose 11.1 per cent in 1999 after falling 2.6 per cent in 1998. Intercity bus transportation accounted for 3.1 per cent and rail for 1.2 per cent of total tourism spending on transportation, while spending on other forms of transportation, including water transport, urban transit, taxi and parking, made up 3.6 per cent. Table 9-1 shows tourism spending on transportation in relation to other tourist goods in 1999.

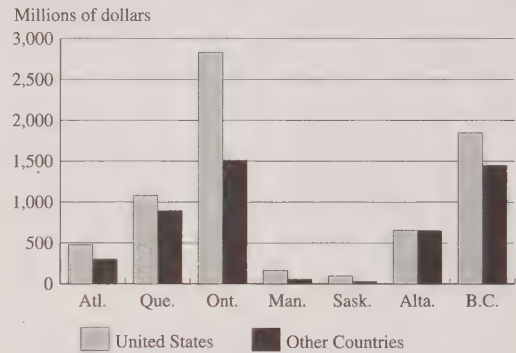
### DISTRIBUTION OF SPENDING

Of the total \$50.1 billion in tourism expenditures in Canada in 1999, Canadians spent 69 per cent, or \$34.8 billion. Foreign visitors spent 31 per cent of the total, continuing the upward trend of the past few years in the foreign proportion of tourism spending. Foreign spending rose 7.7 per cent in 1999, compared with a six per cent rise in domestic spending in 1999. In the first three quarters of 2000, domestic demand strengthened relative to foreign demand, as domestic spending rose 7.7 per cent while foreign spending rose 6.2 per cent.

In 1999, tourism spending by non-residents rose in all regions at least eight per cent, with the exception of Ontario, where it rose only 3.2 per cent. Although Ontario had the lowest percentage increase in non-resident tourism spending, it accounts for almost 40 per cent of total spending. Atlantic Canada had an increase of 26 per cent, the highest of any region in Canada. This was

due to increased spending by both US tourists (16.7 per cent) and other foreign visitors (44.1 per cent). In Quebec, expenditures by US tourists rose 17 per cent, while expenditures by tourists from other countries fell 1.5 per cent. Ontario had a small increase in spending by tourists from all areas. Spending by foreign tourists in Manitoba and Saskatchewan rose 16.6 per cent and 22.3 per cent, respectively. While both types of foreign spending rose sharply, the total expenditures in Manitoba and Saskatchewan make up only three per cent of the total spending in all regions. Foreign tourism spending rose by about nine per cent in both Alberta and British Columbia. Figure 9-2 shows the regional distribution of tourism spending on overnight trips by non-residents in 1999.

FIGURE 9-2: EXPENDITURES BY OVERNIGHT  
NON-RESIDENT VISITORS BY PROVINCE, 1999



Note: Staying one or more nights in Canada.

Source: Statistics Canada, Cat. 66-201

TABLE 9-1: TOURIST SPENDING IN CANADA ON TRANSPORTATION AND OTHER MAJOR CATEGORIES, 1999

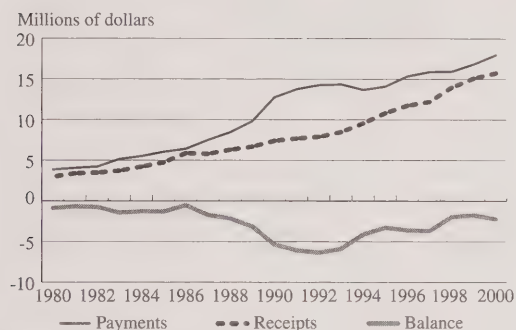
	Domestic (Millions of dollars)	Per cent change 1998/99	Exports (Millions of dollars)	Per cent change 1998/99	Total (Millions of dollars)	Per cent change 1998/99
Transportation	16,165	8.5	3,919	8.5	20,084	8.5
Passenger Air Transport	9,426	9.9	2,170	8.3	11,596	9.6
Passenger Rail Transport	144	8.3	88	6.0	232	7.4
Interurban Bus Transport	412	1.2	201	6.3	613	2.9
Vehicle Rental	361	0.3	653	9.0	1,014	5.7
Vehicle Repairs and Parts	1,907	2.3	83	3.8	1,990	2.3
Vehicle Fuel	3,456	11.2	469	10.6	3,925	11.1
Other Transportation	459	2.9	255	9.0	714	5.0
Accommodation	3,636	2.1	3,424	8.4	7,060	5.1
Food and Beverage Services	4,562	3.1	3,541	7.6	8,103	5.0
Other Tourism Commodities	3,649	4.9	1,424	7.8	5,073	5.7
Total Tourism Commodities	28,012	6.3	12,308	8.1	40,320	6.8
Total Other Commodities	6,812	4.8	2,980	6.2	9,792	5.3
<b>Tourism Expenditures</b>	<b>34,824</b>	<b>6.0</b>	<b>15,288</b>	<b>7.7</b>	<b>50,112</b>	<b>6.5</b>

Source: Statistics Canada, Cat. 13-009

## THE TRAVEL ACCOUNT AND INTERNATIONAL PASSENGER FARES

The international travel account looks at the spending of foreign visitors travelling in Canada and compares it with the value of what Canadians are spending when they travel outside the country. Figure 9-3 shows the balance of Canada's international travel account between 1980 and 2000.

FIGURE 9-3: CANADA'S INTERNATIONAL TRAVEL ACCOUNT, 1980 – 2000



Source: Statistics Canada, Cat. 66-201

## TRAVEL DEFICITS

Canada's travel deficit rose by 28.1 per cent in 2000 to \$2.23 billion, reversing the decrease of the previous three years. This increase reflects the fact that Canadian spending outside Canada rose at a greater rate than spending by foreigners in Canada.

Canadians spent \$18 billion outside the country in 2000, up 6.1 per cent. Foreign tourists spent \$15.7 billion in Canada, an increase of only 4.2 per cent. Canadians increased their spending in the United States by 4.7 per cent to \$11.2 billion, while Americans increased their spending in Canada by 2.9 per cent to \$9.5 billion. The travel deficit with the United States rose 16.1 per cent to \$1.7 billion. Canada's travel deficit with other countries also rose, as Canadians spent \$6.5 billion, or 10.1 per cent more, abroad in 2000. Overseas visitors increased their expenditures in Canada by 6.2 per cent to \$6.2 billion. The overseas travel deficit increased by 86 per cent to \$557 million.

## INTERNATIONAL PASSENGER FARES

Canadians increased their purchases by 9.2 per cent to \$4.06 billion of passenger fares from foreign carriers in 2000, while Canadian carriers sold \$3.12 billion in

passenger fares to foreign travellers, a 15.5 per cent increase. The result was a 7.8 per cent decline to \$934 million deficit in this account. Air fares accounted for almost all of these transactions, with Canadians purchasing \$3.81 billion worth from foreign carriers. On the other side of the equation, Canadian air carriers sold \$3.08 billion in air fares to foreign travellers. For land transportation, Canadians spent \$93 million on passenger fares from foreign carriers, while foreign travellers spent \$33 million on fares from Canadian carriers. Payments for US water transportation by Canadians totalled \$95 million in 2000, while US residents paid \$15 million. Two million dollars worth of US rail fares were purchased by Canadians, while US residents bought \$7 million worth.

## TRAVEL OVERVIEW

Table 9-2 presents an overview of domestic travel by Canadians in 1999 and of international travel by both Canadians and non-residents in 1999 and 2000.

TABLE 9-2: CANADIAN TRAVEL SUMMARY, 1999 – 2000

	2000	1999			
	Person-trips (000)	Person-trips (000)	Duration (nights)	Average distance (km)	Average spending (\$)
Domestic		143,180	1.7	294	137
Same-day		96,723	-	151	56
Intraprovincial		66,355	-	145	52
Interprovincial		3,368	-	253	127
Overnight		73,457	3.3	430	214
Intraprovincial		58,491	2.7	267	138
Interprovincial		14,966	5.4	1,070	510
International	95,819	95,504			
Canadians	47,182	46,448	-	-	333
to US	42,666	42,768	-	-	226
Same Day	28,073	28,082	-	-	41
Overnight	14,594	14,105	7.1	-	595
to Other Countries	4,515	4,244	16.4	-	1,396
Americans	43,993	44,630	-	-	281
Same Day	28,879	28,450	-	-	59
Overnight	15,114	15,180	3.9	-	621
Non-US Residents	4,643	4,425	-	-	1,108
Same Day	205	194	-	-	37
Overnight	4,438	4,231	11.3	-	1,168

Source: Statistics Canada, Cat. 87-504 XPB and 66-201

## DOMESTIC TRAVEL

Canadians took 143.2 million domestic travel trips in 1999, an increase of just under one per cent, compared with an increase of 13 per cent in 1998. Same-day trips increased 1.4 per cent while overnight trips rose only marginally. Interprovincial trips rose more than intraprovincial trips for both same-day and overnight trips. In fact, overnight intraprovincial trips actually fell marginally.

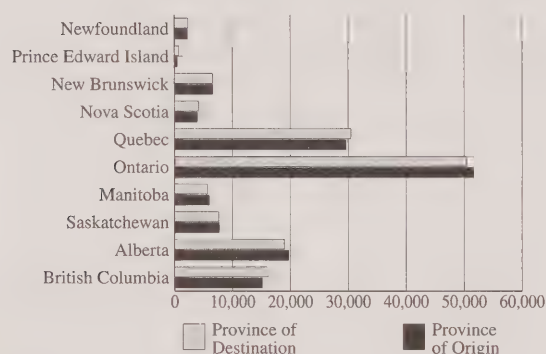


## DISTRIBUTION OF TRAVEL BY PROVINCE

As can be seen in Figure 9-4, travel volumes by province reflect the distribution of the Canadian population. In 1999, the most populous province, Ontario, was the destination for 35 per cent of total domestic trips, followed by Quebec with 21 per cent, Alberta with 13 per cent and British Columbia with 11 per cent. This pattern also holds true for the number of trips taken by provincial residents. The largest differences between the relative population size and the relative number of trips taken are in Alberta. Albertans took about four per cent more trips than their relative population size. Quebec on the other hand, took about three per cent less.

**FIGURE 9-4: DOMESTIC TRAVEL BY PROVINCE, 1999**

(Person-trips of 80+ kilometres)



Source: Statistics Canada, Cat. 87-504-XPB

On a per capita basis, Canadians each took 4.7 trips in 1999. The residents of Alberta, Saskatchewan and New Brunswick travel the most, around seven trips per year; the residents of Prince Edward Island and British Columbia travel the least, taking just under four trips per year. The number of trips taken by residents of Prince Edward Island has risen by about one trip per year since the Confederation Bridge opened. About 13 per cent of all trips in Canada were interprovincial trips.

## PURPOSE AND MODE OF TRAVEL

In 1999, Canadians took 55.4 million trips for pleasure, which represented 39 per cent of total trips, a two per cent increase over 1998. Of total trips, Canadians took 50.2 million, or 35 per cent to visit friends and relatives, a one per cent drop from 1998. Trips for business or to attend conventions made up 14 per cent of total trips, while 13 per cent were for personal reasons. These percentages were unchanged from the previous year.

As Table 9-3 shows, the automobile is by far the most dominant means of transport. Overall, it accounted for 91.8 per cent of all trips taken in 1999, a proportion that remains virtually unchanged from 1998. For same-day trips, the automobile accounted for 96.2 per cent of trips compared with 87.7 per cent for overnight trips. The second most common means of transportation is the airplane, which accounted for 4.2 per cent of all travel. There was a drop of one per cent in overnight business travel by airplane in 1999.

**TABLE 9-3: DOMESTIC TRAVEL BY MODE OF TRANSPORT, AND BY PURPOSE, 1999**

(Per cent of person-trips 80+ kilometres)

	Total	Same day	<i>Overnight, primary trip purpose</i>		
			Total	Non-Business	Business
Car	91.8	96.2	87.7	90.5	65.4
Plane	4.2	0.8	7.5	4.8	29.4
Bus	2.6	2.3	2.9	3.0	2.5
Rail	0.6	0.2	0.9	0.8	1.8
Boat	0.4	0.1	0.6	0.6	-
Other	0.4	0.3	0.4	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0

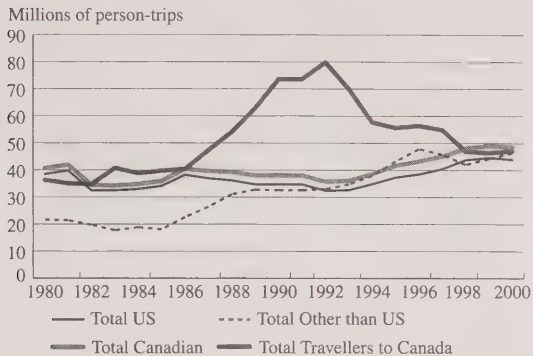
Source: Statistics Canada, Cat. 87-504-XPB

## INTERNATIONAL TRAVEL

The total number of travellers who crossed Canadian borders in 2000 rose 0.3 per cent to 95.8 million, reversing a decline in trips in 1999. Canadians increased their trips to both the United States and other destinations, with total international trips rising by 1.6 per cent to 47.2 million. There was a 1.1 per cent increase in the trips by Canadians to the United States compared with a 1.3 per cent decline in 1999. The number of Canadians travelling overseas increased by 6.2 per cent, up substantially from a less than one per cent increase in 1999. Americans took 44 million person-trips, or 1.4 per cent fewer trips to Canada in 2000, while other nationalities took 4.6 million person-trips, or 4.9 per cent more trips. Figure 9-5 shows trends in international travellers entering Canada between 1980 and 2000.

## CANADA-US TRAVEL

Overall, travel between Canada and the US fell marginally, by 0.2 per cent, in 2000 to 86.6 million. This is attributable to a fall in US travel to Canada that was steeper than the rise in Canadian travel to the United States. Same-day automobile trips continued to be the most prevalent, accounting for 62.2 per cent. While this proportion was about 66 per cent from 1987 to 1997, it has been falling over the past three years.

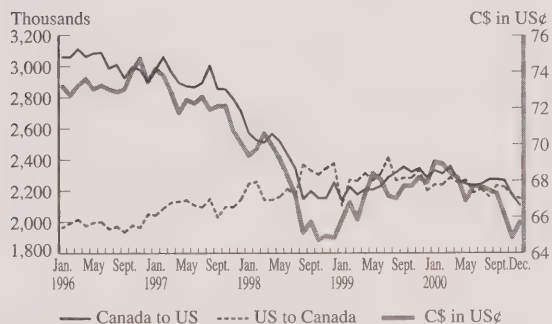
**FIGURE 9-5: INTERNATIONAL TRAVELLERS ENTERING CANADA, 1980 – 2000**

Source: Statistics Canada, Cat. 66-201

Putting an end to a four-year downward trend, same-day visits by Canadians to the United States were stable in 2000 at 28.1 million. Overnight visits rose 3.5 per cent to 14.6 million; this continues the upward trend of 1999, which had a 5.0 per cent increase. American same-day trips fell 1.9 per cent to 28.9 million and overnight trips fell 0.4 per cent to 15.1 million. Overnight trips in both directions fell from May to August, reflecting the price of gas and the cool, damp summer. Figures 9-6 and 9-7 show the trends in same-day and overnight travel between Canada and the United States.

**FIGURE 9-6: SAME-DAY CANADA-US AUTOMOBILE EXCURSIONS, 1996 – 2000**

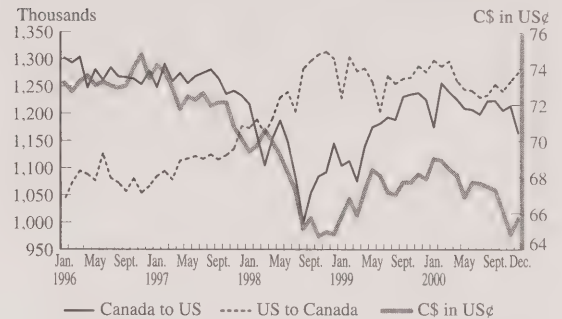
(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

**FIGURE 9-7: OVERNIGHT CANADA-US EXCURSIONS, 1996 – 2000**

(Seasonally adjusted)



Source: Statistics Canada, Cat. 66-201

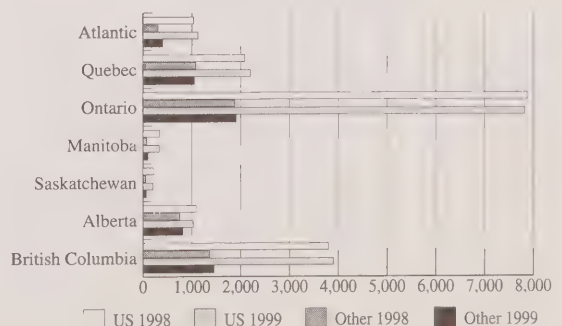
### Distribution of Travel

In 1999, the number of Canadians travelling to the United States increased by 4.9 per cent over 1998. There was little change in the popularity of the destinations. New York and Michigan accounted for 18 and eight per cent, respectively, of the total same-day visits in 1999 and Pennsylvania and Vermont each accounted for six per cent. The top states for overnight stays remained New York, with 12 per cent of total trips in 1999, Florida and Washington each with nine per cent, Michigan with six per cent and California with five per cent.

For Americans travelling to Canada in 1999, Ontario was by far the most popular province, accounting for 47 per cent of total overnight trips. As indicated in Figure 9-8, British Columbia accounted for 25 per cent and Quebec for 15 per cent, while Alberta and the Atlantic provinces accounted for nine and seven per cent, respectively.

**FIGURE 9-8: DESTINATION BY PROVINCE OF OVERNIGHT INTERNATIONAL TRAVELLERS, 1998 – 1999**

(Thousands of overnight visits)



Source: Statistics Canada, Cat. 66-201

## Purpose of Travel

An increasing number of Canadians continue to make overnight trips to the United States for business purposes. In 1999, business travel accounted for 19 per cent of trips, virtually unchanged from 1998, but up from the 16 per cent share in 1996 and 1997. Conversely, there was a drop in trips by Canadians for pleasure purposes in 1999, from 57 to 52 per cent. The number of trips to visit friends and relatives continued to rise in 1999, making up 19.5 per cent of overnight travel, up from 17 per cent in 1996. The remaining proportion of overnight trips, about nine per cent, was taken for other reasons such as health and religion.

In contrast, the proportion of overnight trips to Canada taken by Americans has remained stable for the past several years. Pleasure, including recreation and holiday, was the primary reason for 57 per cent of American overnight trips to Canada in 1999. Visiting friends and relatives remains the reason for 18 per cent of trips, while business is the purpose for 16 per cent.

## Means of Travel

While Table 9-4 shows that the automobile was used for most Canada-US travel in 2000, there have been small increases in the use of other modes over the past several years. This trend is strongest in overnight travel. Between 1996 and 2000, for example, the percentage of Canadians using an automobile to take overnight trips to the United States fell from 63 per cent to 55 per cent. Over the same period, airplane travel has risen steadily from 29 to 36 per cent. There have also been steady marginal increases in the use of other modes. For same-day traffic, although the automobile remained dominant with about 97 per cent in 2000, there has been a steady but small drop in this proportion.

**TABLE 9-4: CANADA-US TRAVEL BY MODE, 2000**

(Thousands of person-trips)

	Canadians		Americans	
	Total	Per cent	Total	Per cent
<b>Same Day</b>	<b>28,073</b>	<b>100.0</b>	<b>28,879</b>	<b>100.0</b>
Auto	27,105	96.6	26,646	92.3
Plane	176	0.6	532	1.8
Bus	678	2.4	1,073	3.7
Other	114	0.4	628	2.2
<b>Overnight</b>	<b>14,594</b>	<b>100.0</b>	<b>15,114</b>	<b>100.0</b>
Auto	7,967	54.6	9,457	62.5
Plane	5,300	36.3	3,836	25.4
Bus	728	5.0	798	5.3
Boat	123	0.8	328	2.2
Foot	340	2.3	537	3.6
Other	137	0.9	158	1.0
<b>Total</b>	<b>42,666</b>		<b>43,993</b>	

Source: Statistics Canada, Cat. 66-201

While not as pronounced, there has also been a drop in the use of the automobile by Americans coming to Canada. Since 1996, the percentage of Americans coming to stay for one night or more in an automobile has fallen by two per cent to 62.5 per cent, while the proportion who come by airplane has risen by two per cent to 25.4 per cent. The number of Americans who come by car for same-day trips has fallen by almost one per cent to 92 per cent.

The proportion of Canadians returning to Canada by air from countries other than the United States via the United States was 15.7 per cent in 2000, similar to the previous four years. After rising to 38 per cent in 1999, the proportion of non-Americans coming to Canada by air via the United States returned to 33 per cent, where it had been for 10 years.

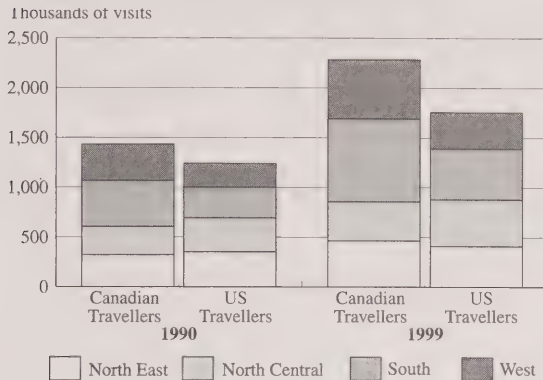
## Business Travel between the US and Canada

From 1990 to 1999, business travel grew by an average rate of 0.8 per cent per year, while non-business travel fell 2.6 per cent per year. Business travel between Canada and the United States has grown by 0.8 per cent per year over the past 10 years. This has occurred as the North American economy has grown and become more integrated following the signing of the Canada-US Free Trade Agreement (FTA) in 1987 and the North American Free Trade Agreement (NAFTA) in 1992, and with the Open Skies policy of 1995, which allowed freer air travel between the two countries.

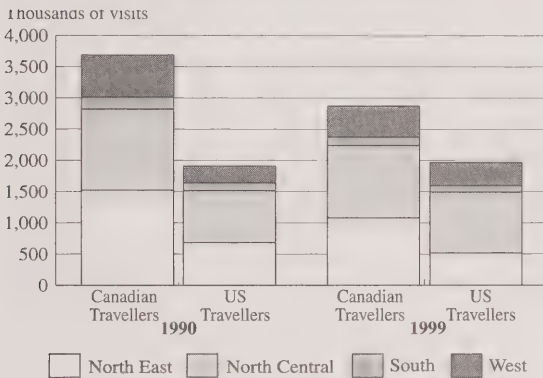
While this overall trend in business travel growth has remained constant over the past 10 years, there have been differences in the travel by Canadians and Americans, and in air compared to automobile travel. Figures 9-9 and Figure 9-10 present information on Canadian and American business travellers to the United States by air and car. Business travel by air over this period has grown strongly, at 4.7 per cent a year, while business travel by automobile fell 1.6 per cent a year. Overall business travel by Canadians to the United States barely grew between 1990 and 1999; however, business travel by Americans grew at an average rate of 1.9 per cent per year.

Business air travel by Canadians to the United States rose 5.3 per cent a year between 1990 and 1999, while by Americans to Canada it grew 3.9 per cent a year. Growth was greatest by both Americans and Canadians to and from the southern states. For Canadians, this was highlighted by more trips to Florida, which rose by almost 100,000 a year over the period; for Americans, it meant more trips from all the southeastern states. For both Canadians and Americans, the share of trips between Canada and the southern states rose from 28.8 per cent



**FIGURE 9-9: CANADA-US AIR BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999**

Source: Statistics Canada, International Travel Survey, Special tabulations

**FIGURE 9-10: CANADA-US AUTOMOBILE BUSINESS TRAVEL, BY US REGION, 1990 VERSUS 1999**

Source: Statistics Canada, International Travel Survey, Special tabulations

to 33.3 per cent, as the total number of trips rose by 6.4 per cent a year. At same time, trips to the western US grew by 5.3 per cent a year and the share of all air trips to the west rose by just over one per cent. The number of trips by Canadians from Ontario to California grew by about 70,000 a year, making up over half of the total visits by all Canadians to the western United States. The number of business trips to the northeastern and the north-central regions rose over the period; however, their share of total air business trips fell.

From 1990 to 1999, total business travel by automobile fell despite a marginal increase in the number of trips by Americans. This overall drop was due to a decline of 2.7 per cent a year in trips by Canadians. Canadian business trips to all regions paralleled the general drop in automobile travel to the United States. Business travel by Canadians to the north-central region of the

United States, however, had the smallest drop, at 1.3 per cent a year. This region's share of trips rose from 35 to 40 per cent, while the shares of all other regions fell. For Americans coming to Canada on business, the number of trips fell only for those originating in the northeastern and the southern states.

As shown in Tables 9-5 and 9-6, in 1999 at least 55 per cent of business travel by both air and automobile between Canada and the US had Ontario as either the origin or the destination. For air travel, Quebec, British Columbia and Alberta were the next most popular provinces accounting for 17.2 per cent, 10.5 per cent and 8.3 per cent respectively for Canadian business travellers and 18.2 per cent, 13.8 per cent and 8.2 per cent for US business travellers. These rankings were similar in 1990 although there was an increase in the share from Ontario of about two per cent and a corresponding drop in the share from Alberta. Between 1990 and 1999, Canadian business travellers from all provinces increased their trips although the growth was strongest for residents from Newfoundland and New Brunswick, while for US travellers, there was a fall in trips to the three Maritime provinces and the Territories.

**TABLE 9-5: CANADA-US AIR BUSINESS TRAVEL, BY PROVINCE, 1999**

	Canadian Travellers			U.S. Travellers		
	1999	Per cent share	1990-99 annual per cent change	1999	Per cent share	1990-99 annual per cent change
Newfoundland	16,200	0.7	10.9	10,000	0.6	527.0
Prince Edward Island	4,000	0.2	5.4	1,400	0.1	(8.1)
Nova Scotia	42,600	1.9	5.8	22,400	1.3	(0.4)
New Brunswick	34,000	1.5	12.4	8,500	0.5	(0.8)
Quebec	393,800	17.2	5.4	319,200	18.2	4.3
Ontario	1,269,000	55.5	5.9	962,300	54.9	3.8
Manitoba	56,700	2.5	6.6	30,400	1.7	3.0
Saskatchewan	36,100	1.6	3.8	13,300	0.8	3.8
Alberta	190,400	8.3	1.5	143,800	8.2	4.9
British Columbia	238,800	10.5	5.0	241,300	13.8	4.4
Yukon/Northwest Territories	3,200	0.1	8.0	800	0.0	(8.0)
<b>Canada</b>	<b>2,284,800</b>	<b>100.0</b>	<b>5.3</b>	<b>1,753,400</b>	<b>100.0</b>	<b>3.9</b>

Source: Statistics Canada, International Travel Survey, Special compilations

In 1999, business travel by automobile, after Ontario the next most popular provinces were British Columbia followed by Quebec and New Brunswick. For Canadian business travellers, 13.6 per cent came from British Columbia, 12.3 from Quebec and 9.2 from New Brunswick. As total automobile business travel by Canadians fell from 1990 to 1999, these provincial shares all dropped from 1990 by one or two percent while Ontario's rose five percent. For US business travellers, 61.8 per cent went to Ontario, 15.4 per cent to British Columbia, 9.7 per cent to Quebec and 6.8 per cent



**TABLE 9-6: CANADA-US AUTOMOBILE BUSINESS TRAVEL, BY PROVINCE: 1999**

	Canadian Travellers 1990-99			U.S. Travellers 1990-99		
	1999	Per cent share	Per cent annual change	1999	Per cent share	Per cent annual change
Newfoundland	500	0.0	10.7	300	0.0	N/A
Prince Edward Island	3,000	0.1	(8.8)	2,000	0.1	19.6
Nova Scotia	25,500	0.9	17.9	5,400	0.3	(1.3)
New Brunswick	264,500	9.2	(5.3)	129,600	6.6	(3.9)
Quebec	353,500	12.3	(3.6)	190,400	9.7	(0.3)
Ontario	1,599,100	55.7	(1.7)	1,213,100	61.8	0.7
Manitoba	109,200	3.8	(3.0)	71,600	3.6	(1.0)
Saskatchewan	38,800	1.4	(8.3)	15,000	0.8	(3.3)
Alberta	83,200	2.9	1.7	29,200	1.5	0.8
British Columbia	391,400	13.6	(4.4)	302,800	15.4	2.4
Yukon/Northwest Territories	2,200	0.1	(9.5)	4,500	0.2	(6.4)
<b>Canada</b>	<b>2,870,900</b>	<b>100.0</b>	<b>(2.7)</b>	<b>1,963,900</b>	<b>100.0</b>	<b>0.3</b>

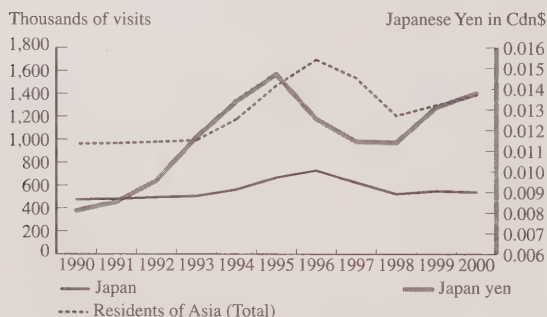
Source: Statistics Canada, International Travel Survey, Special compilations

to New Brunswick. Overall from 1990 to 1999, US business travel remained at the same level, although it grew in Ontario, British Columbia, Alberta and Prince Edward Island, while falling in the other provinces.

## TRAVEL BETWEEN CANADA AND COUNTRIES OTHER THAN THE UNITED STATES

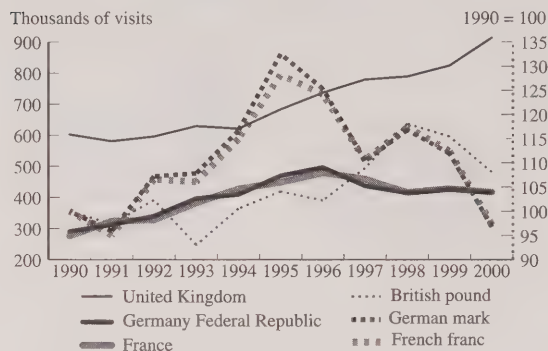
### Overseas Travel to Canada

Visitors to Canada from overseas countries, from countries other than the US, rose by 4.9 per cent to 4.6 million in 2000, after an increase of 5.2 per cent in 1999. While overall, the number of Asian visitors increased by 6.8 per cent, the number of Japanese visitors fell by 1.9 per cent to 540,095, despite of an increase in the value of the yen. Visitors from South Korea rose sharply again in 2000, up 37.2 per cent to 149,000, following an increase of 50.3 per cent in 1999. The number of visitors from

**FIGURE 9-11: VISITORS TO CANADA FROM ASIA, 1990 - 2000**

Note: Indices for exchange rates are foreign currencies in terms of C\$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

**FIGURE 9-12: VISITORS TO CANADA FROM MAJOR EUROPEAN COUNTRIES, 1990 - 2000**

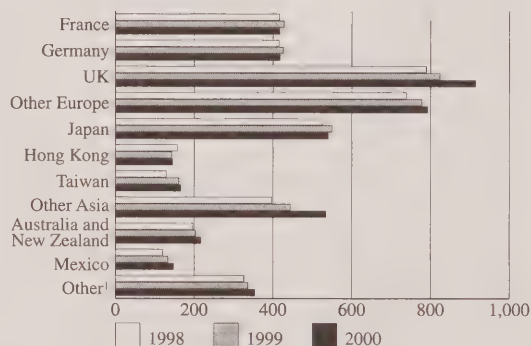
Note: Indices for exchange rates are foreign currencies in terms of C\$.

Source: Statistics Canada, Cat. 66-201; Bank of Canada

Australia and New Zealand rose 7.1 per cent to 217,000. The number of visitors from Europe increased as well, rising 3.4 per cent overall, but not from all countries. Visitors from the United Kingdom continued the steady increases of the last six years, as the number rose 10.9 per cent in 2000. Other countries showing increases included the Netherlands and Switzerland, whose visits rose 6.5 per cent and 3.2 per cent, respectively. Visitors from France and Germany reversed the increases of 1999, falling 2.5 per cent and 2.1 per cent respectively. These decreases reflected the drop in the value of the French franc and German mark. Visitors from Mexico increased by 10.6 per cent to 146,900 while visitors from South America increased by 6.2 per cent to 125,100.

**FIGURE 9-13: VISITORS TO CANADA FROM COUNTRIES OTHER THAN THE UNITED STATES, 1998 - 2000**

(Thousands)



1 St. Pierre & Miquelon, Caribbean, Mexico and Oceania (including Australia).

Source: Statistics Canada, Cat. 66-201

Figures 9-11 and 9-12 show some important exchange rate and international visitor flow information, while Figure 9-13 shows the origin of visitors to Canada from countries other than the United States in recent years.

### Distribution of Travel

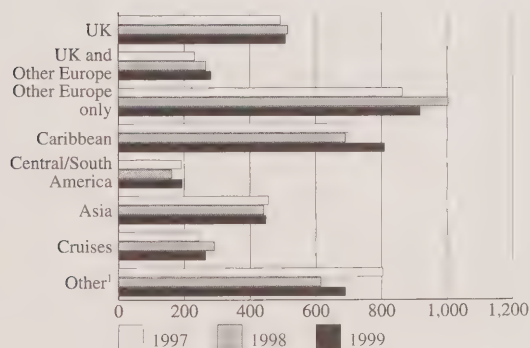
In 1999, one third of overseas visitors to Canada chose Ontario as their destination. British Columbia was the second most popular, with 25 per cent, and Quebec third, with 18 per cent. Alberta was the destination for 14 per cent of visitors and Atlantic Canada for seven per cent, while the remaining three per cent went to Manitoba and Saskatchewan. Visits increased to all provinces except Quebec, where visits fell 3.3 per cent due to a drop in visitors from France. Overseas visitors to Atlantic Canada rose almost 30 per cent in 1999, with most coming from Europe. Figure 9-8 shows the destination by provincial region for overseas visitors staying at least one night.

### Canadian Travel Overseas

In 2000, Canadians increased their trips to countries other than the US by 6.2 per cent, up from the less than one per cent increase in 1999. In 1999, trips to Cuba almost doubled, making Cuba the fourth most popular country destination for Canadians after the United Kingdom, Mexico and France. Cruise trips by Canadians were down 9.3 per cent after increasing by 18.8 per cent in 1998 and 27.6 per cent 1997. Trips to the United Kingdom remained constant, while trips to most European countries declined. Trips to Asia increased by about 1.5 per cent. Figure 9-14 shows which countries Canadians travelled to other than the United States from 1997 to 1999.

FIGURE 9-14: CANADIAN TRAVEL TO COUNTRIES OTHER THAN THE UNITED STATES, 1997 – 1999

(Thousands)



1 Mexico, Caribbean, Central and South America and Africa.

Source: Statistics Canada, Cat. 66-201

### Overseas Travel: Purpose and Mode of Travel

Pleasure is the most common reason for overseas travel. As shown in Table 9-7, pleasure trips accounted for 49.6 per cent of travel to Canada by residents of countries other than the United States in 1999. A decade ago, this figure was 45 per cent. On the other hand, Canadian travellers returning to Canada from countries other than the United States gave pleasure as the reason for 59.8 per cent of their trips in 1999, up from 57 per cent for the past five years and almost regaining the 61.1 per cent level of 1990.

TABLE 9-7: PURPOSE OF TRIP FOR OVERSEAS TRAVEL, 1990 AND 1999

Trip Purpose	(Per cent of person-trips)		Non-Residents (Non-U.S)	
	Canadians 1990	Canadians 1999	1990	1999
Business	14.3	16.1	18.1	17.6
Visiting friends and relatives	18.4	17.7	31.8	27.8
Pleasure	61.1	59.8	45.3	49.6
Other	6.3	6.4	4.8	5.1
Total	100.0	100.0	100.0	100.0

Source: Statistics Canada, Cat. 66-201

For travellers from overseas countries, the increase in pleasure trips has come at the expense of trips to visit friends and relatives, which made up 27.8 per cent of the trips in 1999, down from 31.8 per cent in 1990. Their trips for business have remained at around 18 per cent and trips for other purposes at around five per cent. For Canadians travelling to countries other than the United States, trips for business purposes made up 16.1 per cent of trips in 1999, down by about one per cent from 1998 but still up from the 14.3 per cent of 1990. Trips to visit friends and relatives made up 17.7 per cent of trips in 1999, down from the 18.4 per cent it had been in 1990. Canadian trips for other purposes have remained about six per cent over the 10 year period.

Of the 4.6 million non-resident travellers from countries other than the United States, 82 per cent arrived by air in Canada in 2000. This percentage has risen over the past four years from the 68 per cent it had been between 1990 and 1996. In 2000, 38 per cent of these overseas travellers entered Canada via the United States. Of these, 1.8 million, or 53 per cent, came by air, 43 per cent by land and four per cent by water. In 2000, 16 per cent of Canadians returning by air from countries other than the United States returned via that country, a proportion that has risen slightly in recent years.



# TRANSPORTATION INFRASTRUCTURE 10

*CN and CPR now account for less than two thirds of the Canadian rail network.*

*Canada's road network is over 1.4 million kilometres in length.*

*Canada Port Authorities account for 54 per cent of total port traffic handled, while 30 airports look after more than 94 per cent of air passenger traffic.*

*Traffic on the St. Lawrence Seaway was down in 2000.*

Transportation infrastructure is vital to the country's economy. It allows people and goods to move across the country as well as to other countries. Transportation infrastructure is made up of a network of roads, railways, airports, ports and waterways that stretch from coast to coast and to the Far North.

This chapter gives an overview of events and issues relating to Canada's transportation infrastructure. It presents the most current status of its elements and also addresses some essential incidental services.

## RAIL TRANSPORTATION INFRASTRUCTURE

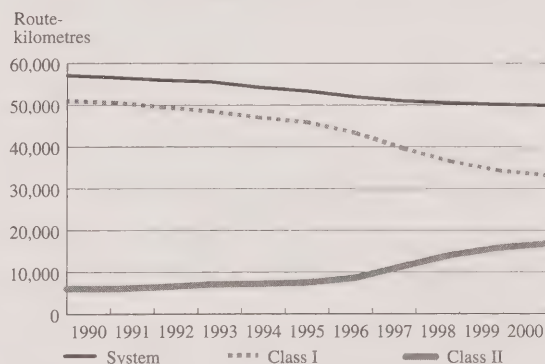
As shown in Table 10-1, the Canadian rail network changed relatively little in aggregate with a reduction of 0.1 per cent in terms of route-kilometres in 2000. Despite this relatively small amount of change in terms of the entire system, ownership again underwent considerable change, with both CN and CPR experiencing reductions in the size of their networks. Most of this rationalization activity on the

part of CN and CPR, however, was accomplished by the transfer of operations and track to other rail carriers, thus continuing recent trends in the distribution of track ownership and the nature of rail operations.

CN and CPR now account for less than two-thirds of the Canadian rail network,<sup>1</sup> while regional and shortline railways now account for almost a third of the entire network.

Figure 10-1 shows the result of rail restructuring on route-kilometres between 1990 and 2000.

FIGURE 10-1: CANADIAN RAIL NETWORK RESTRUCTURING, 1990 - 2000



Source: Transport Canada

TABLE 10-1: RAILWAYS IN CANADA, 2000

	2000 owned/ leased route kilometres	1999 owned/ leased route kilometres <sup>1</sup>	Per cent of total (2000)	Percentage change over previous year
CN	19,143	19,617	38.2	(2.4)
CPR	14,068	14,695	28.1	(4.3)
Regional and Shortline Railways <sup>2</sup>	16,189	15,138	32.3	6.9
All Others <sup>3</sup>	691	686	1.4	0.8
Total	50,092	50,135		(0.1)

1 1999 trackage revised slightly to reflect improved data.

2 The Quebec Central Railway trackage that had been abandoned during 1994 was transferred to Express Marco during 2000. This will result in an apparent discrepancy in the trackage shown in Table 10-1.

3 Terminal and switching railways, Canadian subsidiaries of US railroads and passenger railways.

Source: Transport Canada

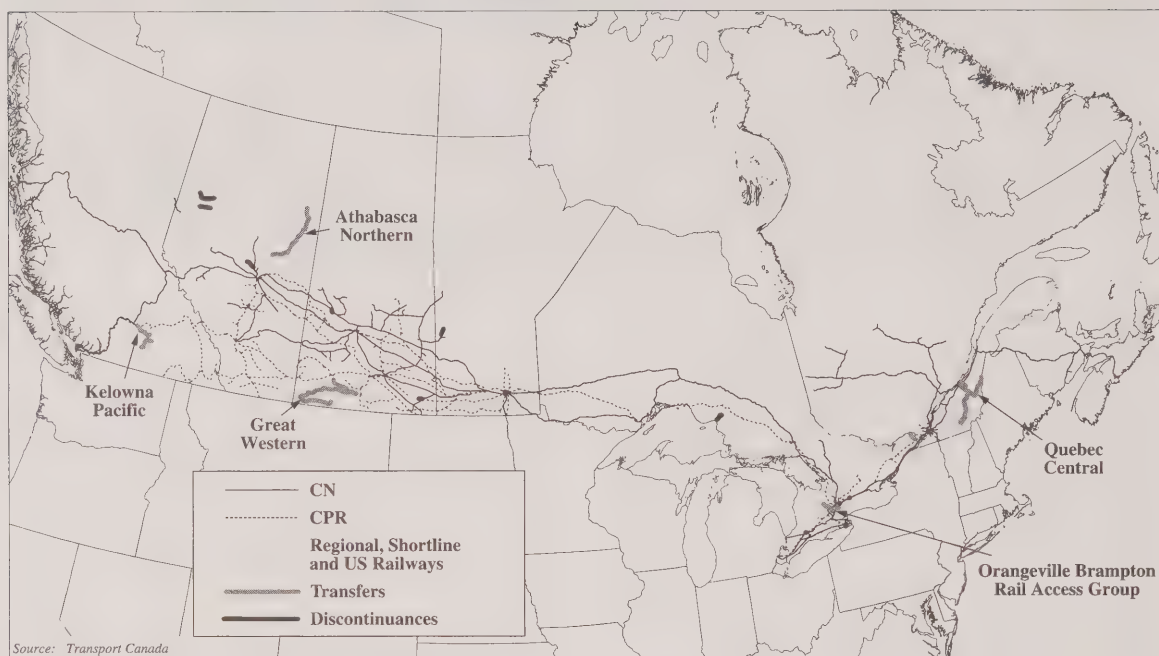
## RATIONALIZATION

Railway rationalization, a term that describes the ways that a railway can deal with track that is no longer economically attractive, encompasses both the discontinuance of operations and the transfer of operations to other rail operators. The driving force

1 In terms of route-kilometres.



FIGURE 10-2: CHANGES IN CANADA'S RAIL NETWORK, 2000



behind rationalization has been the need to reduce a railway's costs and the costs of the services offered. Transfers of lines to other carriers have several advantages: the lines remain in operation, shippers often receive improved service, and the traffic continues to flow to the Class I carrier, thus continuing to generate revenues.

Figure 10-2 illustrates the CN and CPR rationalization activity that occurred in the rail network in 2000.

Lines transferred to other, smaller rail operators are known as shortline railways. On several occasions, CN and CPR have formed what are known as "internal

shortlines," that share many of the characteristics of lines transferred to other operators. While the objectives are the same as with transfers to other operators, internal shortlines usually involve special agreements with labour to facilitate their development.

Railways must provide notice of their intentions by filing plans for their proposed network rationalization for the forthcoming three-year period. In addition, a process provided for under the Act requires that lines proposed for discontinuance be offered for sale to other potential operators or, failing any expression of interest, to other levels of government. Only after all such avenues have been exhausted, are lines permitted to discontinue service.

TABLE 10-2: CN AND CPR RATIONALIZATION BY PROVINCE, 1990 – 2000

		(Route-kilometres)									
		British Columbia	Alberta	Saskatchewan	Manitoba	Ontario	Quebec	New Brunswick	Nova Scotia	Territories	Total
Discontinuances	CPR	510	581	982	137	390	784	429	242	0	4,056
	CN	5	381	648	879	1,394	499	79	227	87	4,199
	Total	516	962	1,630	1,016	1,784	1,283	508	469	87	8,255
Transfers	CPR	365	216	682	0	967	700	191	85	0	3,206
	CN	168	2,103	544	1,727	937	1,015	328	378	122	7,323
	Total	534	2,318	1,225	1,727	1,904	1,715	519	463	122	10,529
Total	CPR	876	797	1,664	137	1,357	1,484	620	328	0	7,262
	CN	174	2,484	1,192	2,606	2,332	1,514	407	604	210	11,512
	Total	1,049	3,280	2,856	2,744	3,688	2,998	1,027	932	210	18,774

Source: Transport Canada

TABLE 10-3: CN AND CPR RATIONALIZATION BY PROVINCE, 2000

		(Route-kilometres)									
		<i>British Columbia</i>	<i>Alberta</i>	<i>Saskatchewan</i>	<i>Manitoba</i>	<i>Ontario</i>	<i>Quebec</i>	<i>New Brunswick</i>	<i>Nova Scotia</i>	<i>Territories</i>	<i>Total</i>
Discontinuances	CPR	0	7	17	0	0	0	0	0	0	24
	CN	0	164	0	32	2	0	0	0	0	199
	Total	0	172	17	32	2	0	0	0	0	223
Transfers	CP	0	0	531	0	55	0	0	0	0	586
	CN	168	0	0	0	86	0	0	0	0	255
	Total	168	0	531	0	141	0	0	0	0	841
Total	CP	0	7	548	0	55	0	0	0	0	610
	CN	168	164	0	32	88	0	0	0	0	453
	Total	168	172	548	32	144	0	0	0	0	1,064

Note: Excludes spur kilometres.

Source: Transport Canada

Of the roughly 1,100 kilometres of line rationalized in 2000, 79 per cent was transferred to other operators. The balance, approximately 225 kilometres of line, was discontinued in 2000, representing a continuation of the declining annual trend in discontinuances that has prevailed since 1996. In a reversal of past patterns, CPR showed a greater amount of rationalization activity than CN during 2000. CN, however, had about 90 per cent of the discontinuances during the year, while CPR had about 70 per cent of the transfers.

Table 10-3 shows rationalization activity by province, in 2000.

Regionally, about 70 per cent of discontinuances occurred in Alberta, while about 63 per cent of line transfers to other operators occurred in Saskatchewan. Over 85 per cent of rationalization activity during 2000 occurred in western Canada. About 75 kilometres (almost 50 per cent) of the discontinued lines in Alberta during 2000 had previously been transferred to RailLink Mackenzie Northern (RailAmerica) and Alberta RailNet Inc. in 1998 and 1999, respectively. Unfortunately, the discontinued lines had insufficient traffic to be economically viable. Another track segment in northern Alberta was transferred by RailLink Lakeland & Waterways (RailAmerica) to Athabasca Northern Railway. This line had been transferred from CN two years ago.<sup>2</sup>

In another development, several lines in the eastern townships of Quebec were purchased by Express Marco from CPR — six years after they had been discontinued. Data for prior years were not adjusted in this case and the trackage involved (425 kilometres) was not included in Table 10-3, although it was reflected in Table 10-2 under CPR discontinuances in Quebec since the discontinuances involved occurred during the 1990's. Figure 10-2 illustrates the distribution of rationalization

activity during 2000, as well as the names of the new carriers to which the track was transferred.

As shown in Table 10-2, since 1990, about 18,800 kilometres of track have been either transferred or discontinued by CN and CPR. About 11,500 kilometres, or 55 per cent of the trackage was transferred to other carriers and the balance discontinued. CN accounted for about 70 per cent of the transfers during this period, while discontinuances were more or less evenly distributed between the two carriers. Ontario experienced the greatest amount of rail line discontinuance (22 per cent) since 1990, followed by Saskatchewan (20 per cent). Over 22 per cent of the track transferred since 1990 occurred in Alberta, with approximately 17 per cent each in Manitoba, Ontario and Quebec.

### THREE-YEAR PLANS

Canadian railways falling under federal government jurisdiction must file plans of their rationalization intentions for the forthcoming three-year period. These plans are usually updated on a frequent basis. The most current CN and CPR plans are dated November 20, 2000, and September 26, 2000, respectively.

TABLE 10-4: PROPOSED CN AND CPR RATIONALIZATION BY PROVINCE

		(Route-kilometres)							
		<i>BC</i>	<i>Alta.</i>	<i>Sask.</i>	<i>Man.</i>	<i>Ont.</i>	<i>Que.</i>	<i>NB</i>	<i>Total</i>
Discontinuances	CPR	9	218	98	58	181	2	13	579
	CN	0	0	140	0	191	10	0	341
	Total	9	218	238	58	372	12	13	920
Transfers	CPR	0	0	407	112	251	39	0	809
	CN	0	0	0	0	131	0	0	131
	Total	0	0	407	112	382	39	0	940

Source: Transport Canada

2 Data for prior years were revised to avoid double-counting.

As shown in Table 10-4, CN and CPR propose to discontinue approximately 920 kilometres of track in the balance of their current three-year plans. About 25 per cent of proposed discontinuances are in Alberta and Saskatchewan, while 40 per cent are in Ontario. Approximately 940 kilometres of track are proposed for transfer, with about 43 per cent slated to occur in Saskatchewan and 40 per cent in Ontario.

Since provincially regulated railways are not required to file similar rationalization plans, little is known of the intentions of these carriers, although past practices would suggest that very little of the system owned or operated by provincially regulated carriers will be discontinued.

## ROAD TRANSPORTATION INFRASTRUCTURE

### CLASSIFICATION OF ROAD NETWORKS

Canada has a dense network of streets and highways that covers virtually every part of the country. Roads are built to different standards depending on the type of traffic and the intended use. In general, they can be classified into four broad categories.

- **Local roads** — Local roads provide access to private property or close-proximity public facilities in urban and rural areas. These roads are characterized by short trip lengths, low volume, low speeds and restricted through-traffic movement. A good example is a street in an urban subdivision. A large proportion of rural local roads are gravel-surfaced.
- **Secondary highways/urban collector streets** — Secondary highways provide access to smaller towns and cities and links to the primary arterial system. Movement is largely restricted to the county as opposed to the provincial level. A good example of a secondary rural highway is any type of county or regional road. In an urban setting, collector streets provide access to residential neighbourhoods funnelling traffic from local roads to higher volume roads.
- **Primary highways/urban arterial streets** — Primary highways handle corridor movements between the larger urban areas in Canada. They are the principal means of interprovincial and intraprovincial movement. They typically handle larger traffic volumes than secondary highways and are characterized by much longer trip lengths. Examples include Highway 1 in Saskatchewan, Highway 97 in British Columbia, Highway 17 in Ontario, Highway 138 in Quebec, and Highway 2 in New

Brunswick. Urban arterial streets carry through-traffic and most of the traffic entering or leaving urban areas. They provide continuity for all rural primary highways that meet at urban boundaries.

- **Freeways** — These are high-volume controlled-access highways in urban and rural areas that permit long-distance movements between major population centres. Highways of this type are characterized by multiple lanes and high speeds, and are restricted to long-distance through movements. Examples include Highway 401 and Autoroute 20, which connect the dense population areas in southern Ontario and central Quebec.

This chapter calculates the length of road networks in two different ways.

- **Route-kilometres** — The simplest method of measurement uses route-kilometres to measure the total length of a road segment between a start and end point without regard for the number of lanes. The measurement is equivalent to the driving distance. Using this definition, a kilometre of multi-lane road would count the same length as a kilometre of two-lane road. This concept is used in this chapter's section on "Primary Provincial/Territorial Highways."
- **Two-lane equivalent route-kilometres** — This measure calculates route-kilometres on a two-lane highway basis. For example, a one-kilometre section of four-lane highway would count as two kilometres on a two-lane equivalent basis, since the facility has a pair of two-lane highways in each direction. A one-kilometre section of an eight-lane highway would count as four route-kilometres. This concept is used to compute the extent of the Canadian road network in the following section, "Canada's Road Network."

### CANADA'S ROAD NETWORK

As shown in Table 10-5, Canada's road network is over 1.4 million kilometres in length (two-lane equivalent basis). Over 1.2 million kilometres, or 85 per cent of the total network, are classified as local roads. The balance, about 200,000 kilometres, is made up of primary and secondary highways under provincial/territorial jurisdiction and major urban arterial and collector roads under municipal/local control.

The largest networks are in the Prairie provinces, which together account for over 40 per cent of the local and total network. Saskatchewan has the single largest network, at over 256,000 kilometres, with most of these roads being unpaved. Ontario and Quebec, with their dense populations, possess nearly two thirds of the freeway network.



TABLE 10-5: LENGTH OF ROADS IN CANADA, 1998

	----- Two-lane equivalent kilometres ('000s) -----					----- Percentage distribution -----				
	Local street/ rural road	Urban collector/ Secondary provincial highway	Urban arterial/ Primary provincial highway	Freeway	Total	Local street/ rural road	Urban collector/ Secondary provincial highway	Urban arterial/ Primary provincial highway	Freeway	Total
Newfoundland	20.2	5.8	1.7	-	27.7	1.7	5.6	1.9	-	1.9
Prince Edward Island	3.6	2.1	0.5	-	6.2	0.3	2.1	0.5	-	0.4
Nova Scotia	43.2	3.1	4.2	0.5	51.0	3.5	3.0	4.7	3.7	3.6
New Brunswick	61.6	6.3	2.2	0.1	70.1	5.0	6.1	2.4	0.6	4.9
Quebec	185.1	12.6	11.3	4.0	212.9	15.2	12.2	12.6	31.2	14.9
Ontario	189.3	28.7	16.5	4.5	239.0	15.5	27.9	18.4	34.9	16.7
Manitoba	95.4	5.6	7.4	0.9	109.4	7.8	5.5	8.3	7.0	7.7
Saskatchewan	223.8	14.4	17.0	0.7	256.0	18.3	14.0	18.9	5.8	17.9
Alberta	191.2	17.7	15.0	1.1	224.9	15.6	17.2	16.7	8.6	15.8
British Columbia	186.1	4.6	10.3	1.0	202.0	15.2	4.5	11.4	8.2	14.2
Yukon	13.5	1.1	2.6	-	17.2	1.1	1.1	2.9	-	1.2
Northwest Territories	8.5	0.9	1.1	-	10.5	0.7	0.9	1.3	-	0.7
<b>Total</b>	<b>1,221.5</b>	<b>102.9</b>	<b>89.8</b>	<b>12.8</b>	<b>1,427.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: dmItSpatial, Canmap streetfile

## PRIMARY PROVINCIAL/TERRITORIAL HIGHWAYS

The most significant network for analysing national road transport issues is the network of primary provincial/territorial highways. This network of arterial highways and freeways connects all the major cities and towns in Canada and supports the major east-west and north-south trade corridors. It also includes the National Highway System (NHS), a network of high-volume roads connecting provincial capitals and significant border points with the United States. As Table 10-6 shows, the primary highway network is over 80,000 kilometres long, with about 30 per cent represented by the National Highway System. Ontario, with over 16,000 route-kilometres, has the single largest share of the primary network, or 20 per cent of the total. Saskatchewan follows with 16,000 route-kilometres, or 19 per cent, then Alberta with

close to 14,000, or 17 per cent, Quebec with over 11,000, or 14 per cent, and British Columbia with 10,000, or 12 per cent. The five remaining provinces and two territories account for the rest of the network with about 15,000 route-kilometres, or 18 per cent of the total.

## TRAFFIC LEVELS

To get an estimate of annual vehicle-kilometres driven, daily traffic counts (all vehicles taken together) collected by provincial/territorial transport departments are applied to defined sections of road, and the product of volume and distance is aggregated. Table 10-6 reveals that in 1996 over 140 billion vehicle-kilometres were driven on the primary highway network, an annual average of 4,700 vehicles per day. The four largest provinces

TABLE 10-6: TRAFFIC LEVELS ON THE PRIMARY PROVINCIAL HIGHWAY NETWORK, 1996

	Network length (thousands)			1996 Vehicle-kilometres (billions)			----- Percentage distribution -----						Annual average daily traffic (AADT)		
	NHS	Other	Primary	NHS	Other	Primary	Network length			Vehicle-kilometres			NHS	Other	Primary
Newfoundland	0.9	-	0.9	1.3	-	1.3	3.9	-	1.1	1.6	-	0.9	3,800	-	3,800
Prince Edward Island	0.1	0.3	0.4	0.2	0.4	0.7	0.5	0.5	0.5	0.3	0.7	0.5	5,200	3,800	4,200
Nova Scotia	0.9	0.6	1.4	2.7	0.9	3.6	3.6	1.0	1.7	3.4	1.4	2.5	8,300	4,300	6,800
New Brunswick	0.9	1.1	2.0	2.3	1.3	3.6	3.9	1.8	2.4	2.9	2.1	2.5	6,700	3,400	5,000
Quebec	3.0	8.5	11.5	19.9	14.9	34.8	12.1	14.6	13.9	25.2	23.4	24.4	18,500	4,800	8,300
Ontario <sup>1</sup>	5.0	11.5	16.5	28.7	23.2	51.9	20.5	19.8	20.0	36.2	36.5	36.3	15,700	5,500	8,600
Manitoba	0.9	6.4	7.3	1.5	3.2	4.7	3.5	11.0	8.8	1.9	5.0	3.3	4,800	1,400	1,800
Saskatchewan	2.1	13.9	16.0	3.1	4.9	8.0	8.6	23.8	19.3	3.9	7.7	5.6	4,000	1,000	1,400
Alberta	3.5	10.2	13.7	8.4	6.4	14.9	14.5	17.5	16.6	10.6	10.1	10.4	6,500	1,700	3,000
British Columbia	5.4	4.8	10.2	10.8	8.4	19.2	22.0	8.3	12.3	13.6	13.1	13.4	5,500	4,800	5,200
Yukon	1.1	0.7	1.8	0.2	0.1	0.3	4.4	1.2	2.2	0.3	0.1	0.2	600	300	500
Northwest Territories	0.6	0.2	0.8	0.1	0.0	0.1	2.4	0.4	1.0	0.1	0.0	0.1	300	50	300
<b>Canada</b>	<b>24.3</b>	<b>58.2</b>	<b>82.5</b>	<b>79.3</b>	<b>63.8</b>	<b>143.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>8,900</b>	<b>3,000</b>	<b>4,700</b>

Notes: NHS = National Highway System.

Network length is in terms of route-kilometres.

<sup>1</sup> Vehicle-km for Ontario are estimated.

Source: Traffic information provided by provincial/territorial highway departments



accounted for nearly 85 per cent of the total. Ontario, with more than 50 billion vehicle-kilometres, accounted for over one third of the total, while Quebec, with nearly 35 billion vehicle-kilometres, accounted for one quarter. These provinces were followed by British Columbia, with nearly 20 billion vehicle-kilometres, or more than 13 per cent of the total, and Alberta, with almost 15 billion, or 10 per cent. The remaining eight jurisdictions generated the balance, with a little over 20 billion vehicle-kilometres, or 15 per cent.

The busiest primary highways were in Ontario and Quebec, where average volumes exceeded 8,000 vehicles per day. The next busiest system was Nova Scotia, whose 100 series highways averaged nearly 7,000 vehicles per day. All other jurisdictions had daily volumes at or below 5,000 vehicles per day.

Table 10-6 also illustrates how concentrated motor vehicle travel is on the National Highway System portion of the primary system. Although it makes up only

### INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Intelligent transportation systems (ITS) encompass a broad range of diverse technologies applied to transportation. Differing from one application to another, ITS work to make transportation safer, more efficient, more reliable and environmentally friendlier, without necessarily having to physically alter existing infrastructure. The range of technologies involved includes sensor and control technologies, communications, and computer informatics. ITS cut across several disciplines, such as transportation, engineering, telecommunications, computer science, finance, electronic commerce and manufacturing. An emerging global phenomenon, ITS benefit both public and private sectors.

Over the years, several ITS applications have been implemented within both road and transit systems. Some of the most recognized applications include the Highway 401 and Queen Elizabeth Way COMPASS Freeway Traffic Management Systems, the Highway 407 Electronic Toll Route, and the NATAP (North American Trade Automation Prototype) automated border crossing test projects.

#### TRANSPORT CANADA'S STRATEGY:

Now in its second year of implementation, Transport Canada's ITS Strategy is intended to stimulate the development and deployment of ITS in Canada. The goals are to maximize the use and efficiency of existing transportation infrastructure and to meet future mobility needs more responsibly. Recognizing that the federal government cannot deliver this strategy alone, Transport Canada encourages new partnerships among all levels of government, the private sector, academia and the Canadian public.

#### STATUS OF CANADA'S ITS PLAN FOR 2000

##### 1. Partnerships for Knowledge — *The Essential Building Block*

Transport Canada, ITS Canada and local ITS stakeholders are into the second year of a three-year partnership. They completed the remaining two of five regional ITS information sessions (in Montreal and in Moncton) during 2000.

##### 2. Developing Canada's ITS Architecture — *A Solid Foundation*

A Canadian ITS architecture compatible with the US architecture was developed. This architecture provides a blueprint for integrating systems to ensure that ITS applications will be able to communicate with each other.

On October 13, 2000, Canada's Minister of Transport and the US Secretary of Transportation signed a Memorandum of Understanding (MOU) to enhance collaboration on surface transportation matters. The MOU promotes, among other things, increased collaboration to advance ITS architecture, standards and joint deployment initiatives.

##### 3. A Multimodal ITS Research and Development (R&D) Plan — *Fostering Innovation*

In March 2000, Transport Canada, in partnership with the private and public sectors and academia, held its preliminary stakeholder consultation to prepare a five-year R&D Plan. The purpose of the plan is to support private-sector innovation and technology development and ensure that ITS technologies lead to safer and more efficient, accessible and sustainable transportation systems.

##### 4. Deployment and Integration of ITS Across Canada — *Moving Forward*

A call for proposals under the ITS Deployment and Integration Plan was launched on March 9, 2000. Proposals were received for cost-shared funding from the public, not-for-profit and academic sectors (maximum of \$250,000 per project), and from the private sector (maximum \$100,000 per project).

Of the 75 proposals submitted, 19 projects were selected for cost-shared funding on September 28, 2000, for a total of approximately \$3 million. From the projects funded, Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Manitoba, Saskatchewan, and the Yukon will receive funds to develop ITS strategic plans.

##### 5. Strengthening Canada's ITS Industry — *Global Leadership*

Canada continues to search for export opportunities in growing international markets. In 2000, Canadian missions went to Japan, Germany, China, Brazil and Italy, among other countries, to position Canada's ITS industry and develop export opportunities for Canadian ITS firms. Canada continues to work on the international front through participation in the ITS World Congress, and attended the most recent congress held in Torino, Italy, in November 2000.

Further details on funded initiatives and other ITS developments can be found at Transport Canada's Web site at <http://www.its-sti.gc.ca>.

30 per cent of the primary network, the National Highway System accounts for 55 per cent of the traffic. Its annual average daily traffic (AADT) was three times that of the rest of the primary system (9,000 AADT versus 3,000 AADT). Some provinces have very low volumes on primary highways outside the National Highway System. Based on AADT, Saskatchewan has only about 1,000 vehicles per day on its non-NHS primary highways, four times less than its NHS highways; Alberta also had similar concentrations, with 6,500 on its NHS highways but only 1,700 on the rest of its system. This pattern also applied in Quebec, which had an average of 18,500 AADT on its NHS highways but less than 5,000 AADT on the rest of its system.

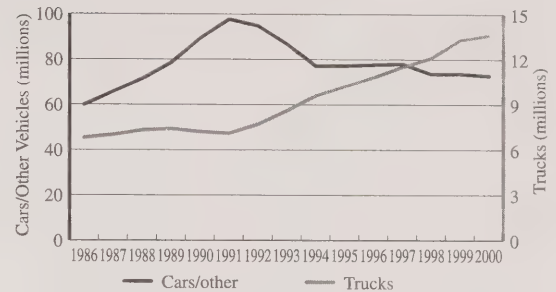
### TRAFFIC BETWEEN CANADA AND THE UNITED STATES

Vehicle traffic between Canada and the United States has been characterized by two separate trends in car and truck movements since the mid-1980s. As Figure 10-3 shows, car traffic<sup>3</sup> grew very strongly during the late 1980s, peaking at 100 million two-way movements in 1991, but has since declined and levelled off during the mid-1990s. Much of these oscillations in car traffic can be tied to variations in the value of the Canadian dollar relative to the American dollar. Substantial appreciation in the Canadian currency during the late-1980s resulted in unprecedented crossborder shopping activity by Canadians that increased the number of border movements by over 60 per cent between 1986 and 1991.

Car traffic fell below 80 million movements per year and stabilized at approximately 77 million crossings during the mid-1990s as a result of a serious recession in the early 1990s compounded by depreciation in the Canadian dollar. In 1998, car movements fell appreciably for the first time since 1994 to 74 million movements, although this was still about two million trips more than in 1988. By 2000, the number had dropped to less than 73 million movements.

Truck traffic, in contrast, has grown substantially during the 1990s. During the 1980s, truck traffic was stuck at about seven million two-way movements per year, but since the coming into force of the Canada-US Free Trade Agreement in 1989 and then the North America Free Trade Agreement (NAFTA) in 1994, truck volumes have surged forward, increasing at an average annual growth rate of over seven per cent since 1991 to the current level of about 13.6 million crossings per year.

FIGURE 10-3: ANNUAL TWO-WAY VEHICLE COUNTS BETWEEN CANADA AND THE UNITED STATES, 1986-2000



Source: Statistics Canada, International Travel section.

### Annual Vehicle Traffic at Major Border Crossings, 1998-2000

Crossborder traffic is heavily concentrated among a small number of sites. As Table 10-7 shows, almost 90 per cent of total truck movements passed through the 20 busiest truck sites in 2000. In terms of total vehicles, the 20 busiest crossings accounted for 73 per cent of total vehicle movements. As Table 10-7 shows, of the 20 busiest truck crossings, the four busiest, and seven in total, were in Ontario: the Ambassador Bridge in Windsor, the Peace Bridge in Fort Erie, the Blue Water Bridge in Sarnia, and the Queenston-Lewiston Bridge in Niagara Falls alone handled 7.5 million trucks in 2000, or 55 per cent of the total. British Columbia and Quebec each had four crossings in the top 20, with their largest crossings, Pacific Highway and Lacolle, rounding out the top 6. New Brunswick had two crossings in the top 20 and the Prairie provinces had one crossing each in the top 20.

## MARINE TRANSPORTATION INFRASTRUCTURE

### PORTS

Canada's major ports are vital links in the national transportation system: they supplement the railways and roads that serve Canadians travelling for business or pleasure, and are essential for transporting the nation's goods for export or import. The infrastructure that supports these ports includes marine terminals that contain a variety of facilities and organizations related to

3 The car traffic includes a very small number of crossings by buses and other non-commercial vehicles. These other vehicles account for less than 0.4 per cent of the "car" total.

**TABLE 10-7: TWENTY LARGEST BORDER CROSSINGS FOR TRUCKS, 1998-2000**

Crossing	Province	Annual two-way traffic volumes (millions)								Distribution (per cent)					
		Trucks				All vehicles				Trucks			All vehicles		
		1998	1999	2000	Rank	1998	1999	2000	Rank	1998	1999	2000	1998	1999	2000
Ambassador Bridge – Windsor	Ontario	3.0	3.4	3.5	1	11.7	12.4	12.3	1	24.7	25.9	25.7	13.6	14.3	14.2
Blue Water Bridge – Sarnia	Ontario	1.3	1.4	1.5	2	5.1	5.5	5.9	5	10.6	10.7	10.9	6.0	6.3	6.8
Peace Bridge – Fort Erie	Ontario	1.4	1.5	1.5	3	7.6	8.0	8.2	3	11.7	11.4	10.7	8.9	9.2	9.5
Queenston–Lewiston Bridge	Ontario	0.9	1.0	1.0	4	4.4	4.4	4.5	6	7.4	7.3	7.7	5.2	5.0	5.2
Pacific Highway	British Columbia	0.8	0.9	0.9	5	7.2	6.9	6.9	4	6.5	6.5	6.4	8.4	8.0	8.0
Lacolle	Quebec	0.8	0.9	0.8	6	2.6	2.8	2.8	8	6.5	6.4	5.9	3.1	3.2	3.2
Lansdowne	Ontario	0.4	0.5	0.5	7	1.6	1.7	1.8	12	3.6	3.8	3.9	1.9	2.0	2.0
Emerson	Manitoba	0.3	0.3	0.4	8	0.8	0.8	0.8	21	2.7	2.6	2.7	0.9	0.9	1.0
Phillipsburg	Quebec	0.3	0.3	0.3	9	1.0	1.1	1.2	18	2.1	2.2	2.3	1.2	1.3	1.4
Rock Island	Quebec	0.2	0.2	0.3	10	1.3	1.4	1.5	16	1.8	1.8	2.0	1.6	1.6	1.7
Coutts	Alberta	0.2	0.2	0.3	11	0.6	0.6	0.6	23	1.7	1.8	1.9	0.7	0.7	0.7
Beauce	Quebec	0.1	0.1	0.2	12	0.3	0.3	0.4	33	1.0	1.0	1.4	0.4	0.4	0.5
Detroit–Windsor Tunnel	Ontario	0.2	0.2	0.2	13	9.4	9.6	8.6	2	2.0	1.5	1.3	11.0	11.1	10.0
Woodstock	New Brunswick	0.1	0.1	0.2	14	0.7	0.7	0.7	22	1.1	1.1	1.3	0.8	0.8	0.9
Aldergrove	British Columbia	0.1	0.1	0.1	15	1.4	1.4	1.4	17	0.9	0.9	1.0	1.6	1.6	1.6
Sault Ste. Marie	Ontario	0.1	0.1	0.1	16	2.7	2.6	2.5	9	1.2	1.1	1.0	3.1	3.0	2.9
North Portal	Saskatchewan	0.1	0.1	0.1	17	0.3	0.3	0.3	35	1.2	1.0	1.0	0.4	0.3	0.3
Huntingdon	British Columbia	0.1	0.1	0.1	18	1.8	1.6	1.6	14	1.0	1.0	0.9	2.1	1.8	1.8
Milltown	New Brunswick	0.1	0.1	0.1	19	0.8	0.8	0.9	20	0.7	0.6	0.8	0.9	0.9	1.0
Kingsgate	British Columbia	0.1	0.1	0.1	20	0.2	0.3	0.3	37	0.7	0.6	0.7	0.3	0.3	0.3
<b>Top-20 (ranked by trucks)</b>		<b>10.8</b>	<b>11.8</b>	<b>12.1</b>		<b>61.7</b>	<b>63.2</b>	<b>63.1</b>		<b>88.9</b>	<b>89.1</b>	<b>89.3</b>	<b>71.9</b>	<b>72.7</b>	<b>73.1</b>
<b>Total</b>		<b>12.1</b>	<b>13.3</b>	<b>13.6</b>		<b>85.7</b>	<b>86.9</b>	<b>86.4</b>							

Source: International Travel section, Statistics Canada and other unpublished statistics

the loading and unloading of vessels berthed at the wharf. Port authorities operate some of these marine terminals, but often they are owned and operated by independent companies that rent space from the port.

## THE PORT SYSTEM

Under the National Marine Policy announced in December 1995, Canada's ports system has undergone reorganization aimed at instilling commercial discipline in port operations. The federal government has moved out of the direct operation of ports, giving local users more say in the port services they pay for and receive. The National Marine Policy was implemented under the *Canada Marine Act* (CMA), which received Royal Assent on June 11, 1998. The policy calls for three categories of ports:

- Canada Port Authorities
- regional/local ports
- remote ports.

The *Canada Marine Act* has created a National Ports System made up of independently managed Canada Port Authorities (CPAs). The authorities are considered self-sufficient ports that are critical to domestic and international trade. They include former Ports Canada local port corporations, most of the former Canada Ports Corporation's major divisional ports, and most former harbour commissions.

To date, 17 of the 18 ports designated to become Canada Port Authorities have received their CPA status through the issuance of letters patent, and their boards of directors have been established. The implementation dates were as follows:

- Halifax, Montreal and Vancouver on March 1, 1999
- Fraser River, Prince Rupert, Quebec, Saguenay, Saint John, Sept-Îles, St. John's and Trois-Rivières on May 1, 1999
- Toronto on June 8, 1999
- Nanaimo, North Fraser, Port Alberni, Thunder Bay and Windsor on July 1, 1999.

Canada Port Authority status for the Port of Hamilton, the last remaining port to be designated as a CPA, will be established once it completes the letters patent process, expected in the spring of 2001. In addition to the original 18 ports listed in the *Canada Marine Act*, Transport Canada received applications for CPA status from two additional ports: the Port of Belledune, a former divisional port of the Canada Ports Corporation; and the Oshawa Harbour Commission. The Minister granted the Belledune Port Authority Canada Port Authority status, through the issuance of letters patent, on March 29, 2000, and has approved the initiation of the CPA implementation process for the Oshawa Harbour Commission. It is expected that Oshawa will complete the letters patent process and receive Canada Port Authority status in early 2001.



The Canada Port Authorities include 11 of the 14 ports formerly defined as Ports Canada, and seven of the nine ports formerly defined as Harbour Commissions. Table 10-8 summarizes the status of these major ports and the date the CPA was created.

Transport Canada is monitoring the compliance of CPAs with the *Canada Marine Act* and their respective letters patent.

The Canada Ports Corporation was dissolved on November 1, 2000. During the implementation phase, it was kept open with minimal staff to ensure that all ports had been transferred. The Port of Prescott was transferred to the Township of Edwardsburgh on October 11, 2000, and Ridley Terminals Incorporated became a parent Crown corporation on November 1, 2000, upon the dissolution of the Canada Ports Corporation.

On March 1, 1999, Part II of the *Canada Marine Act* came into force for existing public ports. Under the National Marine Policy, the majority of ports under the control and administration of Transport Canada were designated as regional/local. These ports range from operations that support significant local and regional commercial activity to very small facilities with little or no commercial traffic.

**TABLE 10-8: CLASSIFICATION OF MAJOR PORTS**

(Status as of December 31, 2000)

Year	--- Prior to 1999 ---		Canada Port Authority Status Effective Date
	Canada Ports	Harbour Commissions	
Halifax	X		March 1, 1999
Montreal	X		March 1, 1999
Vancouver	X		March 1, 1999
Fraser River		X	May 1, 1999
Prince Rupert	X		May 1, 1999
Quebec City	X		May 1, 1999
Saguenay	X		May 1, 1999
Saint John	X		May 1, 1999
Sept-Îles	X		May 1, 1999
St. John's	X		May 1, 1999
Trois-Rivières	X		May 1, 1999
Toronto		X	June 8, 1999
Nanaimo		X	July 1, 1999
North Fraser		X	July 1, 1999
Port Alberni		X	July 1, 1999
Thunder Bay		X	July 1, 1999
Windsor		X	July 1, 1999
Belledune	X		March 29, 2000
Hamilton <sup>1</sup>		X	
Oshawa <sup>2</sup>		X	
Port Colborne <sup>3</sup>	X		
Prescott <sup>3</sup>	X		
Ridley Terminals <sup>4</sup>	X		

<sup>1</sup> Designated to become Canada Port Authority.

<sup>2</sup> Applications for Canada Port Authority status under consideration.

<sup>3</sup> Divested to private entities.

<sup>4</sup> Became a parent Crown corporation in 2000 upon the dissolution of the Canada Ports Corporation.

Source: Port Corporations and Port Property, Transport Canada

Whether a port supports an isolated community or several large industries, Transport Canada's operational role is normally limited to enforcing regulations regarding public port and public port facility use, monitoring port operations, and collecting user fees. Services such as cargo handling are supplied by the private sector.

Transport Canada began commercializing its public ports before the introduction of the *Canada Marine Act*, as legislative authority was not required for this process to begin. Under the National Marine Policy, regional/local ports are being transferred to other federal departments or to provincial governments, municipal authorities, community organizations or private interests over a six-year period ending in 2001/02. Public ports are also being deproclaimed once Transport Canada has relinquished the last of its ownership interests, including the harbour beds as appropriate, to a new owner. Once the public port or public port facilities have been deproclaimed, Transport Canada no longer has the authority to regulate activities in these waters. For this reason, federally appointed harbour masters, whose prime responsibilities are to administer public port regulations, are being removed once the ports are deproclaimed.

As of December 31, 2000, 382 of the 549 public ports and public port facilities under Transport Canada's control and administration have been transferred, deproclaimed, demolished, or have had the department's interests terminated.

Table 10-9 summarizes the changes that have taken place in responsibility for ports operations since 1996.

**TABLE 10-9: PORTS NO LONGER UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA, 1996 – 2000**

Year	Transferred <sup>1</sup>	Deproclaimed <sup>2</sup>	Demolished/ Closed	Transport Canada Interests Terminated	Total
1996	78	199	0	0	277
1997	32	0	2	0	34
1998	10	0	0	1	11
1999	11	12	1	10	34
2000	24	0	0	2	26
<b>Total</b>	<b>155</b>	<b>211</b>	<b>3</b>	<b>13</b>	<b>382</b>

<sup>1</sup> Numbers include remote ports and sites where harbour beds have not yet been divested.

<sup>2</sup> Does not include deproclamation of 26 harbours found during subsequent archival research, nor deproclamation of 18 public harbours located adjacent to port facilities that had already been divested.

Source: Port Corporations and Port Property, Transport Canada

As of December 31, 2000, a total of 167 regional/local and remote ports and port facilities remain under Transport Canada control. An additional 15 sites remain where the public port has not yet been deproclaimed



FIGURE 10-4: CANADA PORT AUTHORITY PORTS



because the harbour bed has not yet been divested. Table 10-10 summarizes the regional distribution of the ports administered by Transport Canada from 1995 to 2000.

TABLE 10-10: NUMBER OF SITES UNDER THE CONTROL AND ADMINISTRATION OF TRANSPORT CANADA BY PROVINCE AND YEAR, 1995 – 2000

Province	1995 <sup>1</sup>	1996	1997	1998	1999	2000
Newfoundland	58	40	20	19	18	18
New Brunswick	45	9	7	6	3	3
Nova Scotia	128	35	35	31	18	12
Prince Edward Island	31	4	4	4	4	4
Quebec	73	48	46	46	45	36
Ontario	54	37	30	25	20	19
Manitoba	2	2	2	2	2	2
Saskatchewan	4	4	4	4	4	4
Alberta	3	1	1	1	1	1
British Columbia	105	92	89	89	78	68
Northwest Territories	46	0	0	0	0	0
<b>Total</b>	<b>549</b>	<b>272</b>	<b>238</b>	<b>227</b>	<b>193</b>	<b>167</b>

1 Last year prior to the National Marine Policy.

Source: Port Corporations and Port Property, Transport Canada

Of the 155 public ports and public port facilities transferred to date, 39 sites were transferred to provincial governments, 64 to other federal departments, and 52 to local interests. As previously mentioned, 15 of these 155 sites have yet to have their public port status deproclaimed.

Since the start of the program, 255 public ports have been deproclaimed overall. Of these, 26 harbours were found during subsequent archival research and are therefore not included in the original 549 port sites identified in the National Marine Policy. In addition, 18 of these public ports were adjacent to port facilities that had already been transferred.

Transport Canada is monitoring local port entities for compliance with the terms and conditions of any contributions that may have been received by these entities.

The federal government will continue to maintain remote ports that serve the basic transportation needs of isolated communities, unless local interests express a willingness to assume ownership of such port facilities. In 2000, one remote port in British Columbia was transferred to a local interest group, bringing the total number of remote ports transferred to 27. Also in 2000, the Port of Cap-aux-Meules, Quebec, was changed from a regional/local port to a remote port following a review of the port facility's classification under the terms of the National Marine Policy. As a result, Transport Canada continues to administer 34 remote ports nationwide (10 in Quebec, three in Ontario, one in Manitoba, and 20 in British Columbia).

Table 10-11 shows the divestiture status of regional/local and remote ports as well as the number of ports remaining on a regional basis.

TABLE 10-11: DIVESTITURE STATUS OF TRANSPORT CANADA REGIONAL/LOCAL AND REMOTE PORTS

(Status as of December 31, 2000)

Region	Transferred <sup>1</sup>	Deproclaimed <sup>2</sup>	Demolished/ Closed	Transport Canada Interests Terminated	Remaining	Total
Pacific	22	10	2	3	68	105
Prairie/Northern	47	1			7	55
Ontario	16	17		2	19	54
Quebec	13	23	1		36	73
Maritimes	20	157		8	19	204
Newfoundland	37	3			18	58
<b>Total</b>	<b>155</b>	<b>211</b>	<b>3</b>	<b>13</b>	<b>167</b>	<b>549</b>

1 Numbers include remote ports and sites where harbour beds have not yet been divested.

2 Does not include deproclamation of 26 harbours found during subsequent archival research, nor deproclamation of 18 public harbours located adjacent to port facilities that had already been divested.

Source: Port Corporations and Port Property - AHPA, Transport Canada

TABLE 10-12: CANADA PORT AUTHORITIES FINANCIAL PROFILES, 1999

(Millions of dollars)

Financial Information	Vancouver	Montreal	Halifax	Québec City	Saint John	St. John's	Prince Rupert	Port Alberni	Fraser River <sup>1</sup>
Operating revenues	76.820	58.872	15.804	11.713	10.406	3.215	6.383	3.183	15.182
Operating expenses <sup>2</sup>	54.761	57.660	12.821	11.912	9.523	2.800	6.009	3.166	14.301
Operating income	22.059	1.212	2.983	(0.200)	0.883	0.415	0.374	0.018	0.881
Ratio: Expenses/Revenues (per cent)	0.713	0.979	0.811	1.017	0.915	0.871	0.941	0.994	0.942
Net income	17.868	4.457	3.447	2.556	1.635	1.002	1.219	0.342	0.806
Net fixed assets	398.909	160.664	82.640	44.227	57.662	13.203	95.247	8.634	104.782
Ratio: Net income/Net fixed assets (per cent)	0.045	0.028	0.042	0.058	0.028	0.076	0.013	0.040	0.008
Investment income	1.162	6.435	0.092	1.763	0.750	0.298	0.407	0.314	0.566
Funds from operations	13.548	15.779	5.785	6.103	3.228	1.294	2.034	0.941	(0.427)
Funds used in investing activities	5.564	23.046	7.623	18.759	5.742	2.071	1.832	(0.162)	(25.799)
Acquisition of fixed assets, net	5.426	9.354	7.623	9.443	1.795	2.071	2.410	(0.162)	15.170
Total assets	453.470	273.065	88.654	74.869	72.356	19.540	106.111	16.853	130.079
Equity	380.991	250.911	76.226	24.618	68.778	18.807	104.966	16.266	87.452
Contributed Capital	150.259	247.210	50.857	0.197	61.659	18.422	84.612	3.158	77.195
Retained Earnings <sup>4</sup>	230.732	3.701	25.369	24.421	7.119	0.385	20.354	13.109	10.257

Financial Information	Nanaimo	North Fraser	Thunder Bay	Toronto	Windsor	Saguenay	Sept-Îles	Trois-Rivières	Total All CPAs <sup>3</sup>
Operating revenues	6.142	3.474	3.048	12.243	1.155	1.189	7.952	3.227	240.007
Operating expenses <sup>2</sup>	6.273	3.492	2.662	17.410	0.952	0.965	4.616	2.797	212.117
Operating income	(0.131)	(0.018)	0.386	(5.167)	0.203	0.225	3.337	0.430	27.890
Ratio: Expenses/Revenues (per cent)	1.021	1.005	0.873	1.422	0.825	0.811	0.580	0.867	0.884
Net income	0.280	0.159	1.051	(3.358)	0.374	0.845	1.526	1.807	36.017
Net fixed assets	23.070	1.906	15.987	43.242	1.483	4.287	37.705	11.786	1,105.432
Ratio: Net income/Net fixed assets (per cent)	0.012	0.083	0.066	(0.078)	0.252	0.197	0.040	0.153	0.033
Investment income	0.385	0.177	0.647	1.809	0.170	0.590	0.590	1.057	17.212
Funds from operations	2.442	0.221	1.508	(2.531)	0.916	1.043	3.405	2.420	57.708
Funds used in investing activities	1.289	1.376	1.567	(1.850)	3.820	2.637	29.205	1.880	78.601
Acquisition of fixed assets, net	0.253	1.376	(0.057)	2.284	0.012	0.059	3.578	2.270	62.904
Total assets	34.945	10.610	28.267	63.019	6.986	14.850	46.754	29.370	1,469.797
Equity	33.246	9.816	27.918	55.432	6.535	14.594	15.890	28.531	1,220.978
Contributed Capital	24.991	6.191	27.231	-	6.232	13.999	14.781	(6.740)	780.254
Retained Earnings <sup>4</sup>	8.255	3.625	0.688	55.432	0.303	0.595	1.110	35.271	440.724

1 Figures represent 12 month period for year ending April 30, 2000. All other figures represent 1999 calendar year.

2 Includes Gross Revenue Charge and Dividend to Canada.

3 Due to rounding, columns may not add to totals shown.

4 May include previous years as reported in the financial statements.

Source: Port Financial Statements; Port Corporations and Port Property, Transport Canada

As Transport Canada relinquishes its ownership interests in public ports and public port facilities, a growing number of "other" ports are being operated by provincial or municipal governments and private interests. At the end of 2000, there were 133 other ports, including 64 private, 40 provincial and 29 municipal ports. These include sites such as Port Cartier, Quebec, and Nanticoke, Ontario, used to ship large volumes of cargo, and Quyon, Quebec, which is used for an interprovincial ferry service on the Ottawa River.

### Financial Performance

Audited financial statements for 2000 are not yet available. As a result, the following results for 1999 are provided for the 17 ports designated as Canada Port Authorities as of December 31, 1999.

Table 10-12 shows revenues, expenses and some key ratios for Canada Port Authorities in 1999. In that year, the CPAs posted total revenues of \$240 million, with a net income of \$36 million and an operating cash flow of \$57.7 million. Among the 17 designated Canada Port Authorities, Vancouver and Montreal accounted for over 56 per cent of the total revenues generated. Four Canada Port Authorities accounted for 64 per cent of total cargo, by volume, handled by CPAs: Vancouver handled 34 per cent, while Montreal, Saint John and Sept-Îles each handled 10 per cent.

The overall operating ratio for the Canada Port Authorities was approximately 88 per cent in 1999, with the individual ratios ranging from 58 to 142 per cent. Except for Sept-Îles (58 per cent) and Vancouver (71 per cent), ratios for all other Canada Port Authorities were above 80 per cent.

The return on assets for the Canada Port Authorities was 3.3 per cent in 1999. Windsor (25 per cent) had the highest return on assets, followed by Saguenay (20 per cent) and Trois-Rivières (15 per cent).

**TABLE 10-13: FINANCIAL RESULTS OF MAJOR PORTS, 1995 - 1999**

	(Millions of dollars)				
	1995	1996	1997	1998	1999
Revenues	279.7	285.9	296.8	287.2	240.0
Expenses	231.4	226.3	235.6	227.0	212.1
Operating Income	53.7	59.9	61.2	60.2	27.9
Ratio (per cent)	82.7	79.2	79.4	79.0	88.4
Net Income	53.5	36.2	44.5	28.1	36.0

Notes: Figures for 1999 include all ports with CPA status as of December 31, 1999.  
Figures for 1995 to 1998 include totals for Canada Ports and Harbour Commissions.

Source: Port Financial Statements; Port Corporations and Port Property; Transport Canada

Table 10-13 shows revenues, expenses and incomes for all the Harbour Commissions and Ports Canada ports for the 1995-1998 period, while 1999 data reflects all ports that have Canada Port Authority status as of December 31, 1999.

At first glance, the figures in Table 10-13 indicate that the total revenues decreased in 1999 from \$287 million to \$240 million. It is important to note, however, that the 1999 revenues do not include the six major ports that were not considered Canada Port Authorities as of December 31, 1999. Table 10-14 compares revenues, expenses, and net income for 1998 and 1999. It includes only those Ports Canada ports and Harbour Commissions that were Canada Port Authorities as of December 31, 1999.

**TABLE 10-14: CANADA PORT AUTHORITIES FINANCIAL COMPARISON, 1998 AND 1999**

	(Millions of dollars)					
	Revenues		Expenses		Net Income	
	1998	1999 <sup>1</sup>	1998	1999 <sup>1</sup>	1998	1999 <sup>1</sup>
Vancouver <sup>2</sup>	73.4	76.8	51.1	54.8	0.4	17.9
Montreal <sup>2</sup>	57.1	58.9	50.4	57.7	13.0	4.5
Halifax <sup>2</sup>	14.1	15.8	11.0	12.8	3.0	3.4
Quebec City <sup>2</sup>	13.1	11.7	12.3	11.9	(10.6)	2.6
Saint John <sup>2</sup>	11.2	10.4	9.9	9.5	1.9	1.6
St. John's <sup>2</sup>	3.0	3.2	2.7	2.8	0.6	1.0
Prince Rupert <sup>2</sup>	7.2	6.4	6.8	6.0	0.8	1.2
Port Alberni <sup>3</sup>	3.0	3.2	3.2	3.2	0.1	0.3
Fraser River <sup>3</sup>	11.5	15.2	10.2	14.3	2.3	0.8
Nanaimo <sup>3</sup>	5.5	6.1	5.8	6.3	0.2	0.3
North Fraser <sup>3</sup>	4.5	3.5	4.3	3.5	0.3	0.2
Thunder Bay <sup>3</sup>	2.8	3.0	2.3	2.7	1.1	1.1
Toronto <sup>3</sup>	13.6	12.2	15.7	17.4	(0.2)	(3.4)
Windsor <sup>3</sup>	1.6	1.2	0.9	1.0	0.8	0.4
Saguenay <sup>2</sup>	1.2	1.2	0.8	1.0	0.7	0.8
Sept-Îles <sup>2</sup>	7.9	8.0	4.2	4.6	1.8	1.5
Trois-Rivières <sup>2</sup>	3.5	3.2	2.4	2.8	2.2	1.8
<b>Total CPA Ports</b>	<b>234.2</b>	<b>240.0</b>	<b>194.0</b>	<b>212.1</b>	<b>18.4</b>	<b>36.0</b>

Note: Due to rounding columns may not add to totals shown

<sup>1</sup> 1999 data includes the financial results of the port's predecessor in that year, and is therefore, a full year.

<sup>2</sup> Prior to 1999 - Ports Canada.

<sup>3</sup> Prior to 1999 - Harbour Commissions.

Source: Port Financial Statements; Port Corporations and Port Property; Transport Canada

In comparing the same ports from 1998 to 1999, revenues increased from \$234 million to \$240 million, or approximately 2.5 per cent. Nine of the 17 Canada Port Authorities reported an increase in revenues ranging from \$0.1 to \$3.7 million. Fraser River and Vancouver reported the highest increases, at \$3.7 million (32 per cent) and \$3.4 million (five per cent), respectively.

According to Table 10-13, it would also appear that in 1999, expenditures decreased by approximately 6.5 per cent; however, the expenses for 1998 included all Ports Canada and Harbour Commissions expenses. Upon further analysis, expenditures for the same ports



indicate that expenses have increased slightly, from \$194 million in 1998 to \$212 million in 1999. Montreal expenses increased from \$50.4 million to \$57.7 million (14.5 per cent), while Fraser River expenses increased from \$10.2 million to \$14.3 million (40 per cent). Twelve of the 17 Canada Port Authorities recorded increases in expenditures that ranged from \$0.1 to \$7.3 million, and four reported decreases between \$0.4 and \$0.8 million. Operating expenditures at Port Alberni remained constant at \$3.2 million over the two-year period.

Net income for the major ports that obtained Canada Port Authority status as of December 31, 1999, has increased significantly, from \$18.4 million in 1998 to \$36 million in 1999, an increase of approximately 96 per cent.

Tonnage for the Canada Port Authority ports in 1999 compared with the tonnage for the same major ports in 1998 indicates a decrease from 207.3 million tonnes to 204.9 million tonnes. Based on this tonnage, the revenue per tonne increased from \$1.13 in 1998 to \$1.17 in 1999, while expenses per tonne increased from \$0.94 to \$1.03.

### Transport Canada Ports

Ten per cent of the ports remaining under Transport Canada's control generated 73 per cent of the total revenues in 1999/2000. As shown in Table 10-15, revenues have fluctuated year over year, because of numerous factors, including tariff increases implemented in 1995 and 1996, a reduction in the number of Transport Canada ports as a result of divestiture, and various utilization factors of Transport Canada's ports and port facilities.

For fiscal year 1999/2000, gross revenues at the remaining facilities were \$19 million, while expenses were \$26.2 million. This left an operating revenue shortfall of \$7.1 million and an operating ratio of 137 per cent. Capital expenditures for the year were \$7.6 million. An additional \$16.6 million in grants and contributions was expended during fiscal year 1999/2000 for costs related to transfers associated with port divestitures.

Since the National Marine Policy came into effect, maintenance expenditures have been reduced to a minimum in anticipation of regional/local port divestiture. Because of divestiture delays, however, some unforeseen maintenance expenses and capital expenditures were incurred in order to maintain safety standards. This had the effect of increasing expenses in 1999/2000. In some cases, capital projects were carried out in remote sites for which Transport Canada will continue to maintain full

responsibility. A few port transfers of substantial value were concluded during this reporting period accounting for the increase in grants and contributions.

Between 1995 and 1999, revenues per tonne increased from \$0.22 to \$0.29, or by approximately 32 per cent, while expenses per tonne<sup>4</sup> over the five-year period have remained relatively stable, decreasing from \$0.43 per tonne in 1995 to \$0.40 per tonne in 1999.

Table 10-15 summarizes the financial details of ports and harbours remaining under Transport Canada's control from 1995/96 to 1999/2000.

**TABLE 10-15: FINANCIAL RESULTS FOR TRANSPORT CANADA PORTS, 1995/96 – 1999/00**

(Millions of dollars)					
	1995/96	1996/97	1997/98	1998/99	1999/2000
Revenue <sup>1</sup>	17.1	20.3	20.7	18.6	19.0
Expenses <sup>2</sup>	33.6	28.5	27.4	24.3	26.2
Operating Income	(16.5)	(8.2)	(6.7)	(5.7)	(7.1)
<b>Capital Expenditures</b>	<b>11.3</b>	<b>11.9</b>	<b>1.9</b>	<b>4.1</b>	<b>7.6</b>
Grants and Contributions <sup>3</sup>	10.0	13.1	1.5	1.3	16.6
<b>Ratio: Expenses/Revenues</b> <b>(per cent)</b>	<b>196.5</b>	<b>140.4</b>	<b>132.4</b>	<b>130.7</b>	<b>137.4</b>

<sup>1</sup> This represents gross revenues.

<sup>2</sup> This represents operating and maintenance expenses including commissions.

<sup>3</sup> This represents transfers related to the devolution of port facilities.

Source: Annual Reports, and Transport Canada. Financial information is based upon accrual

### Port Traffic

The following preliminary data shows the traffic at some Canada Port Authorities in 2000:

- Halifax: 13.9 million tonnes;  
138,000 cruise ship passengers
- Montreal: 20.4 million tonnes;  
25,200 cruise ship passengers
- Prince Rupert: 7.6 million tonnes
- Quebec: 16.3 million tonnes
- Saguenay: 0.401 million tonnes
- Saint John: 19.7 million tonnes
- Sept-Îles: 21.1 million tonnes
- Thunder Bay: almost 8.9 million tonnes
- Toronto: two million tonnes
- Vancouver: 69.8 million tonnes;  
1.1 million cruise ship passengers
- Windsor: 5.4 million tonnes

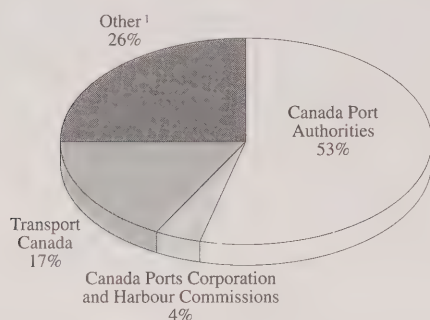
Based on preliminary data provided by Statistics Canada (available only up to 1999), Canada's ports handled 386.9 million tonnes of cargo in 1999, an increase of approximately three per cent over 1998.

4 Tonnage statistics include cargos moved across private facilities within Transport Canada public harbours.



Figure 10-5 shows traffic shares by port groups in 1999, based upon port classification as of December 31, 1999.

FIGURE 10-5: TRAFFIC SHARES BY PORT GROUPS, 1999



<sup>1</sup> Includes the Department of Fisheries and Oceans, provincial and municipal governments and private facilities.

Source: Transport Canada

Traffic data presented for 1999 is based upon port classification as of December 31, 1999, while 1998 traffic data has been restated to reflect the change of former Canada Port Corporation ports and Harbour Commissions ports to Canada Port Authority status in 1999.

In 1999, Canada Port Authorities handled the largest amount of traffic, with a 53 per cent share of the total. The four ports still classified as divisional ports of the Canada Ports Corporation or as Harbour Commissions as of December 31, 1999, transported four per cent of the total, while another 17 per cent of cargo was moved through Transport Canada facilities. The remaining 26 per cent was handled by other facilities, including those managed privately and those managed by or on behalf of the Department of Fisheries and Oceans and provincial and municipal governments.

Calculating 1998 traffic for Canada Port Authorities and comparing that with 1999 totals shows a decrease from 207.3 million tonnes to approximately 205 million tonnes, a decrease of approximately one per cent. As a result of 34 divestiture transactions completed in 1999, the total tonnage that moved across Transport Canada public ports and public port facilities decreased by 17 per cent. This, coupled with a former Canada Ports Corporation port (Port Colborne, Ontario) being transferred to a new entity, resulted in a significant increase of traffic moving over other ports.

At those declared public ports where Transport Canada has no facilities and cargo is transported across private wharves, cargo shipped totalled 16.3 million tonnes, or 25 per cent of the total traffic handled by Transport Canada ports. Approximately 102 million

tonnes of cargo crossed "other" ports. In this category, Port Cartier, Quebec, with approximately 19.9 million tonnes, handled the most cargo, followed by Nanticoke, Ontario, which carried 12.3 million tonnes. The balance was carried by the remaining 110 other ports that reported cargo tonnage to Statistics Canada.

Table 10-16 compares details of tonnage handled in Canada's port system.

TABLE 10-16: TOTAL TONNAGE HANDLED IN CANADA'S PORT SYSTEM, 1998 – 1999

Port System	(Thousands of tonnes)		Per cent Change
	1998 Total <sup>1</sup>	1999 Total	
Canada Port Authorities <sup>2</sup>	207,295	204,942	(1)
Canada Ports Corporation and Harbour Commissions	16,133	14,645	(9)
Transport Canada <sup>2</sup>	79,024	65,547	(17)
Other	73,611	101,797	38
<b>Total</b>	<b>376,063</b>	<b>386,931</b>	<b>3</b>

<sup>1</sup> 1998 numbers restated to reflect change of former CPC Ports and Harbour Commissions to CPA status in 1999.

<sup>2</sup> Tonnage statistics include cargos shipped across private facilities.

Source: Transport Canada, Shipping in Canada; Statistics Canada, Cat. 54-205-X1B

## Small Craft Harbours

During 2000, the Small Craft Harbours (SCH) program of the Department of Fisheries and Oceans (DFO) continued to make progress toward divesting derelict/low-activity fishing harbours and recreational harbours from its inventory. At the end of this exercise, all recreational harbours will have been transferred and the number of fishing harbours under DFO/SCH responsibility reduced to fewer than 750.

## Fishing harbours

Since the late 1980s, the SCH has supported the creation of local Harbour Authorities to take over management of commercial fishing harbour facilities in their communities. Harbour Authorities are local non-profit organizations made up of fishers and other harbour users, to which SCH leases the management of the harbour. The Harbour Authorities provide services, maintain the facilities, and manage the harbour operations on a day-to-day basis. As of January 3, 2001, Harbour Authorities managed 604 sites across the country, representing close to 80 per cent of the SCH program's target. Fishing harbours not able to generate the community interest necessary to form and manage a Harbour Authority will be disposed of or, if necessary, demolished. Such harbours are usually low- or no-activity sites and have negligible impact on the commercial fishing industry.

Table 10-17 shows the fishing harbours remaining in the Small Craft Harbours portfolio as of January 3, 2001, by region and type of management.

**TABLE 10-17: FISHING HARBOURS BY MANAGEMENT TYPE AND REGION, JANUARY 2001**

Region	Harbour Authorities	Small Craft Harbours	Total by Region
British Columbia <sup>1</sup> and Yukon <sup>2</sup>	67	84	151
Prairies and Territories <sup>2</sup>	20	34	54
Ontario	3	10	13
Quebec	51	43	94
Maritimes	277	112	389
Newfoundland and Labrador	186	210	396
<b>Total</b>	<b>604</b>	<b>493</b>	<b>1,097</b>

1 Totals include 48 mooring buoy sites in British Columbia.

2 There are no Harbour Authorities in Saskatchewan, the Northwest Territories, Nunavut or the Yukon.

Source: Small Craft Harbours, Fisheries and Oceans Canada

### Recreational harbours

The Small Craft Harbours program is committed to the divestiture of all recreational harbours in its inventory and has achieved 71 per cent of its target since 1994-95, with 599 recreational harbour sites transferred, or in the final stage of divestiture. Recipients are mainly municipalities, local non-profit organizations, First Nations or other federal departments. In Ontario and Quebec, the main recipients of SCH federal recreational harbours are municipalities.

The disposal strategy adopted by SCH complies with the Program Transfer Flexibilities approved by Treasury Board in 1995. Disposals done under this program (i.e. for a \$1.00 consideration) have conditions, including a requirement to maintain public access for at least five years. Recreational harbours are offered to potential recipients in a preset order of priority: other federal departments first; provinces, municipalities, local non-profit associations or First Nations second; and the

**TABLE 10-18: RECREATIONAL HARBOURS DIVESTED BY REGION, 1995/96-2000/2001**

	1995/96	1996/97	1997/98	1998/99	1999/2000	Plans for 2000/2001	Remaining to be divested	Total by Region
British Columbia and Yukon	8	1	25	13	7	2	9	65
Central and Arctic	8	50	95	71	41	20	162	447
Quebec	53	24	93	15	18	8	41	252
Maritimes	0	3	10	28	22	8	9	80
Newfoundland and Labrador	0	0	0	1	0	0	1	2
<b>Total</b>	<b>69</b>	<b>78</b>	<b>223</b>	<b>128</b>	<b>88</b>	<b>38</b>	<b>222</b>	<b>846</b>

Note: Includes harbours transferred or in the final transfer stage as of January 3, 2001.

Source: Small Craft Harbours, Fisheries and Oceans Canada

private sector through a tendering process last. Prior to transfer, SCH conducts an environmental assessment of the site and completes any necessary repairs to ensure that the facilities are transferred in a safe and reasonable condition. In the absence of a public body interested in acquiring the facilities, they are offered at market value. Should there be no private interest in the facilities, they are demolished. The recreational harbour divestiture program is expected to continue for several more years.

Tables 10-18 to 10-20 summarize, by region, the status of the Small Craft Harbours recreational harbour divestiture program, recipients of harbours divested, and type of management of the remaining harbour sites in the SCH inventory.

**TABLE 10-19: RECIPIENTS OF DIVESTED RECREATIONAL HARBOURS, AS OF JANUARY 2001**

	Province	Municipality	Private Sector	Other <sup>1</sup>	Total by Region <sup>2</sup>
British Columbia and Yukon	54	0	0	0	54
Prairies and Territories	8	5	0	0	13
Ontario	17	171	19	47	254
Quebec	3	177	3	23	206
Maritimes	5	18	3	45	71
Newfoundland and Labrador	0	1	0	0	1
<b>Total</b>	<b>87</b>	<b>372</b>	<b>25</b>	<b>115</b>	<b>599</b>

1 In the context of the divestiture of recreational harbours, refers to sites that have been transferred to local non-profit organizations, First Nations or other federal departments, as appropriate.

2 Number of harbours transferred, or in the final transfer stage as of January 3, 2001.

Source: Small Craft Harbours, Fisheries and Oceans Canada

**TABLE 10-20: SMALL CRAFT HARBOURS RECREATIONAL HARBOURS BY MANAGEMENT TYPE, AS OF JANUARY 2001**

	Managed under lease <sup>1</sup>	Small Craft Harbours	Other <sup>2</sup>	Total by Region <sup>3</sup>
British Columbia and Yukon	0	3	8	11
Prairies and Territories	9	21	0	30
Ontario	113	33	4	150
Quebec	5	40	1	46
Maritimes	0	9	0	9
Newfoundland and Labrador	0	1	0	1
<b>Total</b>	<b>127</b>	<b>107</b>	<b>13</b>	<b>247</b>

1 Managed under lease by municipalities, local non-profit organizations, etc.

2 Refers to a variety of management and non-management situations. Some construction works, such as shoreline reinforcement or breakwaters, are largely stable and do not require ongoing management. Some facilities are part of a larger development, such as a marina, and managed as part of that development. In other cases, facilities no longer exist at the site and there is nothing to manage.

3 Remaining recreational harbours in Small Craft Harbours inventory as of January 3, 2001.

Source: Small Craft Harbours, Fisheries and Oceans Canada

As a result of its Harbour Authority and Disposal Programs, Small Craft Harbours revenues for 2000/01 from leases, licences, and berthage and wharfage are projected to be 33 per cent less than in 1999/2000. The largest decrease is expected in Ontario, for the second consecutive year, with revenue declining by \$548,140, or 36 per cent. Close to 94 per cent of the 2000/01 budget is allocated to harbour repairs, while salaries and contributions make up 5.8 and 0.3 per cent of the budget, respectively.

## ST. LAWRENCE SEAWAY

A shared responsibility between Canada and the United States, the St. Lawrence Seaway is a unique inland waterway, extending into the industrial heartland of North America and serving 15 major international ports and some 50 regional ports on both sides of the Canada-US border.

The Seaway locks (15 in total) connect the shipping channel in two major sections: Montreal-Lake Ontario and the Welland Canal. Between Montreal and Lake Erie, the locks lift vessels up to the height of a 60-storey building above sea level. The Montreal-Lake Ontario section has seven locks — five Canadian and two American. The Welland Canal links Lake Ontario and Lake Erie with a series of eight locks. The locks and channels are capable of accommodating vessels 225.5 metres long, 23.8 metres in beam and eight metres in draft. Figure 10-6 shows the St. Lawrence Seaway System.

## SECOND YEAR UNDER NEW MANAGEMENT

In 2000, the Canadian Seaway saw its second full year of management by the St. Lawrence Seaway Management Corporation (SLSMC). The SLSMC began operations of the Canadian portion of the St. Lawrence Seaway on October 1, 1998, following the successful negotiation of a management contract with the federal government pursuant to Part 3 of the *Canada Marine Act*. This agreement is in force until March 31, 2018.

FIGURE 10-6: GREAT LAKES – ST. LAWRENCE SEAWAY SYSTEM



Source: St. Lawrence Seaway Authority, Annual Report, 1997 - 1998



Responsible for managing, operating and maintaining the Seaway, the SLSMC must submit a five-year business plan, throughout the term of the agreement, to the Minister of Transport. The plan includes anticipated revenues and operating and asset renewal costs. The corporation is required to charge tolls and generate other revenues to finance the operation and maintenance of the Seaway. For its ports, the federal government is required to provide financial assistance to eliminate operating deficits, if they arise.

### North Channel Bridge and the All-Canadian Seaway Option

In 2000, the Minister of Transport announced that an "all-Canadian Seaway" option is no longer required and that the Federal Bridge Corporation Limited is free to begin developing options to replace the high-level bridge at Cornwall. The announcement marked an end to the government's commitment to an all-Canadian Seaway option, which dates back to the 1950s.

During the 1950s, the Seaway project went ahead after receiving support from both Canada and the United States. At the time, however, Canadian interests were concerned about the US commitment to the project; therefore, the federal government decided to retain the option to construct the Seaway as a solely Canadian project at some point in the future. For this reason, the Cornwall Seaway International Bridge was built to Seaway height over the Cornwall Canal, which would have been the routing of an all-Canadian Seaway.

A review of the long-term maintenance strategy for the North Channel portion of the crossing concluded that the cost of major maintenance on the 40-year-old bridge could be as much as double the cost of constructing a new low-level bridge.

### TRAFFIC

In the 2000 season, combined traffic on the two sections of the Seaway was down by over one million tonnes from 1999 levels to 46.5 million tonnes (based on preliminary traffic data). This was due largely to lower grain traffic through the system. This decrease in grain was partly offset by an increase in general cargo traffic (primarily iron and steel products) over 1999 levels.

The 1999 navigation season extended for 270 days, with 24-hour navigation of the system beginning on April 1, 1999, and the last ships exiting St. Lambert Lock and the Welland Canal on December 25, 1999.

Traffic decreased slightly from 1998 levels, returning to 1997 levels. While US grain exports increased, activity in

the steel industry decreased. Combined Seaway traffic for both major sections totalled 47.86 million tonnes, a decrease of 5.2 per cent from the 1998 total of 50.51 million tonnes. Traffic decreased by about 7.2 per cent to 36.5 million tonnes on the Montreal–Lake Ontario section, and by 7.9 per cent to 37.4 million tonnes on the Welland Canal.

Vessel transits on the Montreal–Lake Ontario section in 1999 were nearly identical to 1998, 3,141 vessel transits compared with 3,158, respectively. On the Welland Canal section, vessel transits increased to 3,626, 199 more than in 1998.

Table 10-21 shows the volume of cargo movements on both major sections of the Seaway from 1990 to 2000.

**TABLE 10-21: ST. LAWRENCE SEAWAY CARGO MOVEMENTS, 1990 – 2000**

	(Thousands of tonnes)	
	<i>Montreal–Lake Ontario Section</i>	<i>Welland Canal Section</i>
1990	36,656	39,398
1991	34,910	36,919
1992	31,360	33,174
1993	31,970	31,815
1994	38,422	39,703
1995	38,684	39,376
1996	38,075	41,145
1997	36,901	40,902
1998	39,246	40,657
1999	36,400	37,422
2000 (estimated)	35,398	36,577

Note: Movements are combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

### Highlights of Traffic by Commodity for 1999

#### Grain

Once again, Canadian grain traffic was below average levels, while US grain shipments increased. Grain traffic totalled 13.6 million tonnes on the Montreal–Lake Ontario section, a 4.5 per cent increase over 1998, and 13.5 million tonnes on the Welland Canal, a 2.6 per cent increase.

#### Iron Ore

Iron ore shipments totalled 10.69 million tonnes on the Montreal–Lake Ontario section, a 3.8 per cent decrease from 1998, and 5.82 million tonnes on the Welland Canal section, a 10.6 per cent decrease. These shifts reflect a greater reliance by Canadian steel mills on iron ore originating from Quebec–Labrador.



## Coal

Fewer shipments of coal were recorded on the Welland Canal, due to lower demand from Ontario Hydro and the Hamilton steel mills. Traffic amounted to 4.52 million tonnes, a 2.4 per cent decrease from 1998. On the Montreal-Lake Ontario section, coal traffic increased because of additional shipments to industries along the St. Lawrence. Total traffic was 266,000 tonnes, an increase of 35.2 per cent.

## Other Bulk Commodities

For other bulk commodities, there was an overall decrease in shipments of major commodities (coke, petroleum, stone, cement, chemicals). On the Montreal-Lake Ontario section, 7.23 million tonnes were carried, a decrease of 8.8 per cent from 1998. On the Welland Canal, 10.06 million tonnes were carried, a decrease of 7.4 per cent.

Table 10-22 shows Seaway traffic by commodity from 1993 to 2000.

**TABLE 10-22: ST. LAWRENCE SEAWAY TRAFFIC BY COMMODITY, 1993 – 2000**

(Thousands of tonnes)

Year	Grain	Iron Ore	General Cargo	Coal	Other	Total
1993	10,592	10,906	4,432	4,408	10,647	40,985
1994	12,464	12,625	7,019	4,528	12,255	48,891
1995	14,485	11,872	4,844	5,005	11,917	48,124
1996	12,158	13,362	6,056	5,460	12,903	49,939
1997	13,339	12,051	5,418	5,545	12,600	48,953
1998	12,483	12,117	7,182	5,510	13,839	51,131
1999	14,084	11,320	4,578	4,542	13,335	47,859
2000	13,213	11,315	5,068	4,346	12,573	46,543

Note: Combined traffic in the two sections of the Seaway.

Source: St. Lawrence Seaway Authority/St. Lawrence Seaway Management Corporation

## Rates and Tariffs

In keeping with the agreement negotiated with Seaway users, a two per cent toll increase for the Canadian section of the Seaway was implemented in 2000. Similar increases were implemented during the 1998 and 1999 seasons. The 1998 increase was the first increase since 1993.

These two per cent annual toll increases, with no discounts or reductions, were negotiated for 1998, 1999 and 2000 as part of the Seaway commercialization agreement. Had the St. Lawrence Seaway Management Corporation been unable to achieve the cost targets set out in its business plan, however, it would have been required to increase the tolls beyond the two per cent

level. This was not necessary, however, because the successful 1998 and 1999 seasons allowed SLSMC to meet and even exceed targets. Years four and five of the plan (2001 and 2002) may even see toll discounts or reductions if the corporation continues to exceed the business plan requirements.

## Financial Profile

Revenues for 1999/2000 amounted to \$76 million, an improvement of over \$3.5 million from the estimate in SLSMC's business plan, but on target with its operating budget. Revenues were down from the 1998/99 fiscal year, which generated \$83.9 million. However, 1998/99 was also a landmark year, earning the highest toll revenue in Seaway history. In 1999/2000, the revenues derived from ship transits amounted to \$73.2 million, a decrease of \$6.1 million from the previous year. This decline was largely the result of a 35 per cent reduction in general cargo tonnage for iron and steel. The revenue from other navigation activities and licence fees totalled \$1.7 million in 1999/2000. Expenses include the winter works program, such as asset renewal and major maintenance.

The corporation's financial results are not compared with previous years' financial statements from the St. Lawrence Seaway Authority, which exclude the revenues and expenses pertaining to the non-navigational assets, the income taxes relating to the St. Lawrence Seaway Authority, amortization expenses, and other expenses that are treated differently.

Table 10-23 provides the financial results of the St. Lawrence Seaway.

**TABLE 10-23: ST. LAWRENCE SEAWAY FINANCIAL PERFORMANCE, 1999/2000**

(Thousands of dollars)

Year	Operating Revenues	Operating Expenditures	Operating Income	Net Income <sup>1</sup>
1999 (October 1998 to March 1999) <sup>2</sup>				
2000 (April 1999 to March 2000)	76,026	75,156	358	630

1 Following contributions from the Capital Fund Trust.

2 Because SLSMC assumed management of the Seaway on October 1, 1998, its first financial statements reflect only three months of operating revenues (October to December, as the Seaway closes from January to March) and six months of expenses (October 1, 1998, to March 31, 1999). The financial results for the first six months of the corporation's existence are therefore not representative of a full year's operation of the Seaway and are not presented.

Source: St. Lawrence Seaway Management Corporation

## Maintenance Activities

As part of the commercialization agreement, the SLSMC is responsible for asset renewal, which budgets

\$126 million in infrastructure maintenance and capital expenditures over the five years of the business plan. The actual expenditure for the 1999/2000 fiscal year was \$23,357,000. During the first two years of the business plan, the SLSMC spent \$49 million on infrastructure, or 39 per cent of the overall allocation.

While the SLSMC manages asset renewal, the Capital Committee which is made up of two members from Transport Canada and two members of the corporation's board, is responsible for approving the asset renewal budget. The committee approves changes to the plan as required, as well as the plan for the next fiscal year.

## MARINE PILOTAGE

### LEGISLATIVE FRAMEWORK

The *Pilotage Act* of 1972, as amended in 1998 by the *Canada Marine Act*, governs marine pilotage in Canada. Under this Act, four regional pilotage authorities were established — Atlantic (APA), Laurentian (LPA), Great Lakes (GLPA) and Pacific (PPA). Each authority is mandated to provide safe and efficient pilotage services that respond to the particular requirements of its traffic, as well as to the varied geography and climatic conditions of the waterways concerned. Although they are not considered agents of the Crown, all authorities report directly to the Minister of Transport.

### FINANCIAL AND OPERATING PERFORMANCE

In 2000, pilotage revenues, on a nationwide basis, did not exceed expenditures. As shown in Table 10-24, only one of the four pilotage authorities, the Atlantic Pilotage Authority, managed to return modest surpluses.

**TABLE 10-24: PILOTAGE AUTHORITY FINANCIAL RESULTS, 2000**

(Thousands of dollars)			
	Revenues	Expenditures	Net Income (Loss)
Atlantic	11,983	11,240	743
Laurentian	41,347	41,717	(370)
Great Lakes	15,542	16,635	(1,093)
Pacific	41,702	42,120	(418)
<b>Totals</b>	<b>110,574</b>	<b>111,712</b>	<b>(1,138)</b>

Source: Pilotage Authorities' Annual Reports (2000 preliminary)

The results for 2000 represent a shift from the trend toward positive net incomes over the last few years. Financial results for each authority from 1996 to 2000 are shown in Table 10-25.

**TABLE 10-25: PILOTAGE AUTHORITY FINANCIAL RESULTS, 1996 – 2000**

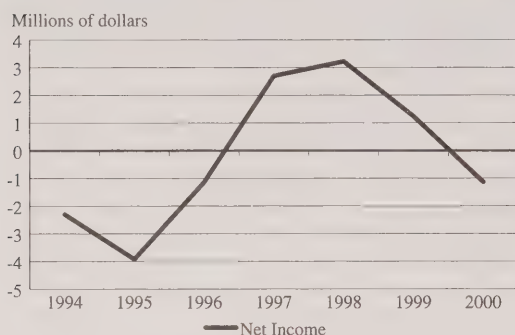
(Millions of dollars)				
Region	Year	Revenues	Expenditures	Net Income (Loss)
Atlantic Pilotage Authority (APA)	1996	8,030	7,538	492
	1997	9,638	8,595	1,043
	1998	9,466	8,796	670
	1999	10,934	9,970	964
	2000	11,983	11,240	743
	Per cent change	9.6	12.7	(22.9)
Laurentian Pilotage Authority (LPA)	1996	36,019	38,847	(2,828)
	1997	38,185	39,019	(834)
	1998	41,311	40,847	464
	1999	41,776	41,300	476
	2000	41,347	41,717	(370)
	Per cent change	(1.0)	(1.0)	(22.3)
Great Lakes Pilotage Authority (GLPA)	1996	12,659	11,643	1,016
	1997	13,251	12,041	1,210
	1998	17,249	15,548	1,701
	1999	14,545	14,898	(353)
	2000	15,542	16,635	(1,093)
	Per cent change	6.9	11.7	(209.6)
Pacific Pilotage Authority (PPA)	1996	36,039	35,859	180
	1997	39,802	38,519	1,283
	1998	37,441	37,056	385
	1999	39,106	38,781	325
	2000	41,702	42,120	(418)
	Per cent change	6.6	8.6	(228.6)
Total Pilotage Authorities	1996	92,747	93,887	(1,140)
	1997	100,876	98,174	2,702
	1998	105,467	102,247	3,220
	1999	106,361	104,949	1,412
	2000	110,574	111,712	(1,138)
	Per cent change	4.0	6.4	(180.6)

Source: Pilotage Authorities' Annual Reports (2000 preliminary)

Total revenues have risen less than expenses. In 2000, expenses increased by more than inflation. Nevertheless, Figure 10-7 shows clearly the trend toward improved bottom lines for pilotage authorities up until 2000.

To measure efficiency of pilotage services, the average number of assignments per pilot is commonly used. Based on this measure, efficiency increased between 1996 and 1998 but declined in both 1999 and 2000.

Table 10-26 shows the number of assignments for each pilotage authority and the total for all authorities between 1996 and 2000. The variations among the authorities and the fluctuations over the period are in response to traffic levels. Overall, total assignments have grown by 10.3 per cent since 1996.

**FIGURE 10-7: PILOTAGE AUTHORITY TOTAL NET INCOME, 1994 – 2000**

Source: *Pilotage Authorities' Annual Reports (1999 preliminary)*

**TABLE 10-26: TOTAL PILOTAGE ASSIGNMENTS AND ASSIGNMENTS PER PILOT, 1996 – 2000**

Pilotage Authority	Indicators	1996	1997	1998	1999	2000
Atlantic (APA)	Total Assignments	8,576	9,760	9,726	11,090	11,498
	Assignments per Pilot	186	212	187	213	229
Laurentian (LPA)	Total Assignments	21,342	20,941	22,018	21,654	20,713
	Assignments per Pilot	123	120	121	120	114
Great Lakes (GLPA)	Total Assignments	6,901	7,192	9,085	8,108	8,605
	Assignments per Pilot	121	113	147	118	106
Pacific (PPA)	Total Assignments	13,403	14,212	13,267	13,776	14,585
	Assignments per Pilot	113	124	115	117	304
Total All Authorities	Total Assignments	50,224	52,105	54,096	54,628	55,402
	Assignments per Pilot	126	129	132	131	129

Source: *Pilotage authorities' annual reports*

## CANADIAN COAST GUARD

### RESPONSIBILITIES

The Canadian Coast Guard's mission is fourfold: ensure safe and environmentally responsible use of Canada's waters; support understanding and management of ocean resources; facilitate the use of Canadian waters for shipping, recreation and fishing; and provide marine expertise in support of Canada's domestic and international interests. The Coast Guard also advances the oceans mandate both through its internal partnership with its Department of Fisheries and Oceans' (DFO) sector counterparts and through its primary role of ensuring safe and environmentally responsible use of Canada's waterways.

The Coast Guard's five business lines — marine navigation services; marine communications and traffic services; icebreaking operations; rescue, safety and

environmental response; and fleet management — are delivered across DFO's five regions. These business lines cover a range of marine programs, policies and services that deal with a broad cross-section of clients within the marine community, including commercial shipping interests, recreational boaters, the fishing industry, ferry services, tug and barge resupply operations in the North, cruise lines, private-sector shippers, and provincial, municipal and territorial governments as well as federal government departments. The Coast Guard also serves the general public through its role in preserving ecosystems, ensuring that water supplies remain unpolluted by oil and chemical spills, and protecting recreational resources.

The Department of Fisheries and Oceans has two key result commitments:

- the conservation and biological sustainability of fisheries resources, marine and freshwater habitats, and a protected environment; and
- the provision of safe, efficient and accessible waterways and harbours.

The Coast Guard's contributions to these commitments are found in each of its business lines in such areas as response to marine oil emergencies, efficient and effective aids to navigation infrastructure, annual deliveries by ship to northern settlements and military sites, and client and public awareness of programs and policies.

### Marine Navigation Services

The overall objective of the Coast Guard's Marine Navigation Services (MNS) business line is to provide safe, efficient and accessible waterways. In keeping with this commitment, the Marine Navigation Services provides, operates and maintains a system of navigational aids; ensures waterways are safely designed and maintained; provides navigation safety information to mariners; ensures protection of the public right to navigation; and protects the environment.

The Marine Navigation Services navigational infrastructure consists of 262 automated light stations, 52 of which are staffed; five LORAN C communication stations; 20 Differential Global Positioning System (DGPS) transmitter sites; and over 6,000 land-based fixed marine aids and more than 12,000 floating aids.

During 2000, the Marine Navigation Services continued to move forward on a number of activities in support of its mission. It continued to modernize navigational aids, for example, through several initiatives, including the complete implementation of a full DGPS in the spring of



2000. It also continued to modernize, maintain, implement and upgrade information systems such as the national databases on the use of Canadian waterways, the Aids Program Information System (APIS), the Marine Aids Costing Model (SRAN), and the Navigable Waters Database System. The Marine Navigation Services also continued to pursue amendments to the *Navigable Waters Protection Act*.

### Marine Communication and Traffic Services

All the functions of the Marine Communication and Traffic Services (MCTS) are derived from a regulatory framework based primarily on the *Canada Shipping Act* and the Safety of Life at Sea Convention. Marine Communication and Traffic Services provide distress and safety communications and co-ordination; vessel screening to prevent entry of unsafe vessels into Canadian waters; regulation of vessel traffic movements; and management of an integrated system of marine information and public correspondence services. Along with ensuring safe marine navigation, the Marine Communication and Traffic Services also support economic activities by optimizing traffic movements and port efficiency, and facilitating industry ship/shore communications.

The Marine Communications and Traffic Services group is supported by an infrastructure that includes staffed communications centres and remote transmitter and receiver sites.

This business line is a core element of the national movement toward sustainable development for oceans and marine resources. As such, it fully supports the Oceans Strategy by looking for ways to improve the monitoring and management of marine protected areas.

The Marine Communication and Traffic Services group is also working to improve its surveillance capability by developing implementation strategies for universal Automatic Identification Systems (AIS) — a leading-edge marine navigation technology that provides mariners and competent authorities with a more efficient and cost-effective means of service delivery. To improve its communications capability, the MCTS is continuing to implement the Global Maritime Distress Safety System (GMDSS), and review infrastructure to find further efficiencies through the application of technological changes.

### Icebreaking Operations

Activities under the Icebreaking Operations business line include providing icebreaking escorts, channel maintenance, flood control, harbour breakouts, and ice-routing and information services for marine traffic navigating through or around ice-covered waters. It also co-ordinates the movement of cargo for the annual resupply of northern settlements and military sites using contracted commercial carriers.

Traditionally, the icebreaking program has provided a wide range of free services; over the past several years, however, it has moved to a more client-focused, demand-driven service that reflects recent downsizing activities. Commercial users now pay a percentage of the allocated costs in the form of an icebreaking service fee.

During 2000, Icebreaking Operations continued to work with the IJS Coast Guard, the North Atlantic Ice Patrol and other governments involved with icebreaking activities to maintain international expertise and recognition. It also continued to strengthen its collaboration with Transport Canada's Marine Safety Branch for the Harmonization of Polar Ship Rules to protect Canada's position and take a proactive role in forums dealing with icebreaking operations or ships operating in ice-covered waters. Preliminary results of an economic study on the benefits of icebreaking services indicate that benefits far surpass the costs of providing this service.

### Rescue, Safety and Environmental Response

The Rescue, Safety and Environmental Response (RSER) business line encompasses the following major activities: marine search and rescue (SAR); environmental response and departmental national emergency preparedness; and the promotion of boating safety to the marine public through prevention and regulation. Its main objective is to save lives and protect the marine environment.

RSER supporting infrastructure includes SAR stations with in-shore rescue boats and several spill-response equipment depots.

This business line moved forward on a number of fronts in 2000, including implementing major new regulating measures to improve boating safety. In particular, these measures covered mandatory operator competency; age and horsepower restrictions; and modernization of small vessel regulations. The group also worked to improve the effectiveness of the oil spill preparedness and response regime by reviewing regulations, standards and guidelines.



The Rescue, Safety and Environmental Response division continued to develop a Canadian hazardous and noxious substances response regime by maintaining the consultation process with major stakeholders and providing an effective maritime search and rescue service through quality and enhanced evaluation initiatives.

### Fleet Management

The Fleet Management business line supports all Department of Fisheries and Oceans performance commitments. Its goal is to provide a safe, efficient and cost-effective sea and air fleet and the related services necessary to support DFO's program delivery, as well as improve client satisfaction.

To support this commitment, the Fleet Management group acquires, maintains and schedules DFO's vessel and air fleets in support of the following program areas: Marine Navigation Services; Icebreaking Operations; Rescue, Safety and Environmental Response; Fisheries Management; and Fisheries and Oceans Science and Hydrography. These program areas provide the funding to crew and operate the fleet. Fleet Management also arranges for any required increase in fleet capabilities by arranging for other government departments and the private sector to provide additional sea and air support to the programs.

Fleet Management activities in 2000 included a move toward a base-fleet concept in which an established minimum number of vessels deliver the program requirements and provide a stable base for financial, operational and human resource planning. In addition, the group continued to implement the fleet safety management system to the standards of the International Management Code for the Safe Operation of Ships (ISM Code) and a costing model to give managers and clients a true understanding of the cost of fleet operations.

Table 10-27 lists the vessel, aircraft and facility assets held by the Canadian Coast Guard in 2000.

**TABLE 10-27: CANADIAN COAST GUARD, VESSEL, AIRCRAFT AND FACILITY ASSETS, 2000**

<i>Vessels and Aircraft</i>	<i>Canadian Coast Guard Facilities</i>
125 major ships	11 major bases
500+ small craft <sup>1</sup>	8 sub-bases
23 inshore rescue boats	22 Marine Communication and
4 air cushion vehicles	Traffic Service centres
27 rotary-wing aircraft	48 Search and Rescue bases
3 fixed-wing aircraft <sup>2</sup>	

<sup>1</sup> Includes lifeboats, surf boats, self-propelled barges, small craft carried on larger ships, shore-based work boats, floating spill boats, oil slick-lickers, and other small craft at Canadian Coast Guard bases and light stations.

<sup>2</sup> Two owned by Transport Canada and one chartered.

Source: Department of Fisheries and Oceans

### FINANCIAL SITUATION — CANADIAN COAST GUARD

Through a combination of efficiency measures and reduced operations, the Coast Guard has permanently reduced its net expenditures on all these services. These reductions have lowered expenses by \$140 million, or 30 per cent, over the four-year period ending 1998/99.

Table 10-28 shows the Coast Guard's financial results for its five major business lines for the last four fiscal years. Results for 2000/01 reflect forecasted expenditures to fiscal year-end and will not be finalized until the end of the fiscal year.

**TABLE 10-28: CANADIAN COAST GUARD REVENUES AND EXPENDITURES<sup>1</sup>, 1997/98 – 2000/01**

<i>Item</i>	<i>(Millions of dollars)</i>			
	<i>1997/98</i>	<i>1998/99</i>	<i>1999/2000</i>	<i>2000/2001<sup>2</sup></i>
Revenue (1)	37.3	39.9	43.7	46.9
Gross Expenditures (2)	522.8	471.0	480.2	427.9
Net Expenditures (2)-(1)	485.5	431.1	436.5	381.0

<sup>1</sup> Includes Marine Navigation Services (MNS); Marine Communication and Traffic Services (MCTS); Icebreaking Services; Rescue, Safety and Environmental Response (RSER); and Fleet Management.

<sup>2</sup> 2000/2001 reflects forecasted expenditures to year-end and will not be finalized until the end of the fiscal year.

Source: Department of Fisheries and Oceans

To obtain a fair contribution from users for programs from which they directly benefit, the Coast Guard has implemented user fees for some programs. The Marine Navigation Services Fee, for example, was introduced in June 1996. It generates \$28.1 million annually, including administration costs.

The Maintenance Dredging Services Tonnage Fee for the St. Lawrence Ship Channel, which came into effect in September 1997, is only an interim measure to cover the total costs incurred by the Coast Guard to provide these maintenance dredging services. The Coast Guard is continuing to work with representatives of the commercial marine transportation industry to arrive at a long-term arrangement, including discussions regarding the transfer of responsibilities to industry for these dredging services.

On December 4, 1998, the Minister of Fisheries and Oceans proposed changes to the Icebreaking Services Fee that would generate \$6.9 million annually, including administrative costs. The proposal is built around a transit-based ice-breaking fee that would be uniformly applied to each transit to, from or within the ice zone during the ice season.

Table 10-29 shows a breakdown of the Coast Guard's revenues and expenditures by its five main business lines for fiscal year 2000/01.

**TABLE 10-29: CANADIAN COAST GUARD REVENUES AND BUDGETED EXPENDITURES, 2000/01**

(Millions of dollars)

	<i>Business Line</i>					
	<i>MNS</i>	<i>MCTS</i>	<i>ICE</i>	<i>RSER</i>	<i>Fleet Mgmt.</i>	<i>CCG Total</i>
Revenues (1)	32.2	0.2	14.4	0.1	0.0	46.9
Gross Expenditures (2)	92.4	76.4	38.9	129.7	90.5	427.9
Net Expenditures [(2)-(1)]	60.2	76.2	24.5	129.6	90.5	381.0

Notes: MNS: Marine Navigation Services; MCTS: Marine Communication and Traffic Services; ICE: Icebreaking Services; RSER: Rescue, Safety and Environmental Response; CCG: Canadian Coast Guard.

Source: Department of Fisheries and Oceans

## AIR TRANSPORTATION INFRASTRUCTURE

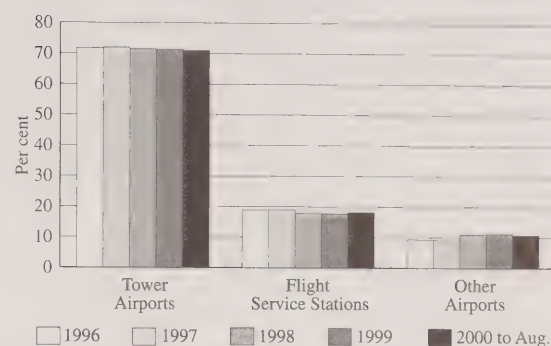
### AIR NAVIGATION SYSTEM

NAV Canada, a private, non-share capital corporation, became the owner and operator of Canada's Air Navigation System (ANS), when the system was transferred from the federal government on November 1, 1996. The system comprises seven Area Control Centres (ACC), one terminal control unit, 43 control towers, 77 Flight Service Stations and 67 maintenance centres, as well as more than 1,400 ground-based navigational aids. NAV Canada provides air traffic control services, flight information, weather briefings, airport advisories and electronic aids to navigation.

### AIR NAVIGATION OPERATIONS

In 2000, the Air Navigation System supported approximately 3.75 million Instrument Flight Rules (IFR) flight plans, 340,000 overflights of Canadian airspace and 320,000 oceanic flight movements. Over five million flight movements were handled by NAV Canada's Control Towers and over 1.2 million movements by Flight Service Stations. Figure 10-8 illustrates the distribution of aircraft arrivals and departures by airport category.

At the end of 2000, NAV CANADA employed 1,828 air traffic controllers (not including trainees) and 781 operational Flight Service Specialists and was continuing to invest heavily in the training of additional controllers and specialists. The number of control towers in Canada has remained constant since the conversion of North Bay's tower to a Flight Service Station in March 1999. The number of Area Control Centres has been constant since 1996. Table 10-30 lists the number of control towers, area control centres, terminal control units and flight service stations in Canada from 1996 to 2000.

**FIGURE 10-8: AIRCRAFT MOVEMENTS BY AIRPORT CATEGORY, 1996 – 2000**

Source: Transport Canada, Aircraft Movement Statistics TP-577

**TABLE 10-30: SUMMARY OF KEY CANADIAN AIR TRAFFIC CONTROL OPERATION STATISTICS, 1996 – 2000**

	1996	1997	1998	1999	2000
Air Traffic Controllers <sup>1</sup>	1,704	1,744	1,716	1,781	1,828
Towers	44	44	44	43	43
Area Control Centres	7	7	7	7	7
Terminal Control Units	2	1	1	1	1
Flight Service Specialists <sup>2</sup>	782	821	816	789	781
Flight Service Stations	83	82	81	78	77
CARS	55	55	56	59	62

1 Operational Controllers (not including trainees)

2 Operational Flight Service Specialists.

3 12 CARS are operated by the Quebec Government.

Source: NAV Canada

### SYSTEM IMPROVEMENTS

NAV Canada completed a number of projects to improve operations in 2000. The *Polar Routes Feasibility Study* was one particular initiative that was undertaken to enhance service to customers. In conjunction with the Federal Aviation Authority of Russia (FAAR), NAV Canada demonstrated that significant savings in time and money could be obtained by flying routes directly over the North Pole region. To accommodate these routes, NAV Canada intends to invest \$7 million to modify the Air Navigation System in Canada's north, primarily the communications infrastructure. Assistance will also be provided to the Federal Aviation Authority of Russia to secure investment to update its air navigation system, and provide language training for Russian controllers.

NAV Canada undertook a number of other notable projects in 2000, some of which are yet to be completed, including:

- Completion of the IFR study, which will result in changes to national sectorization and airspace assignment between Area Control Centres.

- Expansion of the Reduced Vertical Separation Minima sectors within domestic airspace. When completed, this initiative will increase the air navigation system's capacity and provide a greater choice of routes.
- Implementation of a Converging Runway Display System at the Calgary airport following an extensive in-house modification of a system purchased from the Mitre Corporation. With this system, runway capacity can be increased by up to 30 per cent under adverse weather conditions.
- Introduction of a new Pre-Departure Clearance (PDC) system at Toronto's international airport resulting in faster taxi and take-off routines by reducing voice communication requirements and frequency congestion.
- Deployment of an Integrated Information Display System/Extended Computer Display System (IIDS/EXCDS) in Toronto, Winnipeg, Vancouver, Calgary, Edmonton, Ottawa and Saskatoon towers to allow controllers to manage electronic flight data online, replacing the traditional method of using paper strips.
- Further deployment of the Radar Data Processing Situation Display (RsiT) to Area Control Centres across Canada providing enhanced functionality for IFR controllers.
- The successful factory and site acceptance testing of the Canadian Automated Air Traffic System (CAATS), the world's first automated flight data processor, providing integration of radar and flight data on a single controller console.

Improvements to the navigation system in 2000 were not limited to air traffic control. NAV Canada also continued to make progress in its program to consolidate flight planning, en-route flight information and advisory services in nine Flight Information Centres (FIC), which will be located in Halifax, Quebec City, London, Winnipeg, Edmonton and Kamloops, Whitehorse, Yellowknife and North Bay.

## FINANCIAL PERFORMANCE

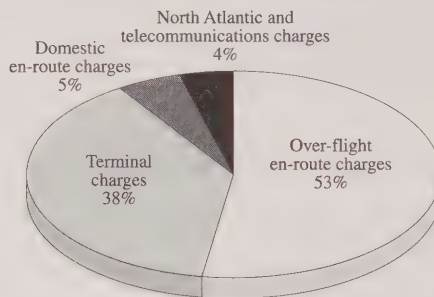
The Air Transportation Tax and transition-period payments by the government to the NAV Canada were abolished in November 1, 1998. At this point, NAV Canada became fully responsible for recovering its costs from customers in the form of service charges. The corporation's service charge structure is in accordance with the *Civil Air Navigation Services Commercialization Act*.

NAV Canada collects its revenues in the form of charges levied on aircraft operators for the provision or availability of air navigation services. The charging system consists of terminal and en-route charges, overflight charges and oceanic charges. Aircraft weighing

three metric tonnes or less pay a flat annual fee, while aircraft weighing greater than three metric tonnes are charged on a per movement or daily basis.

A reduction in user fees, first introduced in 1999, continued in 2000, saving customers approximately \$50 million annually. NAV Canada intends to maintain these reduced charges until December 31, 2001. Figure 10-9 shows the fee sources for NAV Canada in percentage terms for 2000.

**FIGURE 10-9: NAV CANADA FEE SHARES, 2000**



Source: NAV Canada

For the fiscal year ending August 31, 2000, NAV Canada reported \$909 million in revenues, \$703 million in operating expenses, and \$204 million in interest, depreciation and restructuring expenses. This resulted in an excess of revenues over expenses of \$2 million. This compares with 1999 fiscal results of \$933 million in total revenues, \$711 million in operating expenses, and \$215 million in interest, depreciation and restructuring expenses for a \$7 million excess of revenues over expenses. Table 10-31 compares NAV Canada financial results for 1999 and 2000.

**TABLE 10-31: FINANCIAL SUMMARY FOR NAV CANADA, 1999 – 2000**

(Thousands of dollars)

Item	1999	2000
Total Revenue	933,120	909,074
Operating Expenses	710,640	703,465
Other Expenses	215,537	203,859
Excess of Revenue over Expenses	6,943	1,750
<b>Capital Expenditures</b>	<b>122,555</b>	<b>101,623</b>

Source: NAV Canada Annual Report, 2000

## AIRPORTS

Canada's approximately 1,800 aerodromes are divided into three categories: water bases for float and ski planes, heliports for helicopters, and land airports for fixed-wing



FIGURE 10-10: MAP OF AIRPORTS DIVESTITURE, 2000 — NATIONAL AIRPORTS SYSTEM



Source: Transport Canada

aircraft. Aerodromes refer to facilities registered with Transport Canada as aircraft landing and take-off sites.

Most of Canada's commercial aviation activity takes place at certified land airports, sites that because of their level of activity or location are required to meet Transport Canada's airport certification standards.

At the close of the year 2000, the Canada Flight Supplement listed 1,109 sites in the land airport category. Of these, 352 were certified. Table 10-32 shows that 247 land airports offered scheduled passenger service,

**TABLE 10-32: CANADIAN LAND AIRPORTS FOR FIXED-WING AIRCRAFT, 2000**

Airport type	Number	Airport service	Number
Certified Land Airports	352 <sup>1</sup>	Airports with Scheduled Passenger Service	247 <sup>2</sup>
Registered Land Aerodromes	743	Airports/Aerodromes without Scheduled Passenger Service	862
Military (land) Aerodromes	14		
<b>Total</b>	<b>1,109</b>	<b>Total</b>	<b>1,109</b>

1 Canada Flight Supplement, November 30, 2000.

2 Official Airline Guide, December 15, 2000.

Source: Transport Canada

while the remaining 862 were available for other public and private uses. Thirty airports handle over 94 per cent of all commercial air passenger traffic in Canada.

While many aerodromes are privately owned, the majority of certified airports are publicly owned. Since the introduction of the National Airports Policy (NAP) in 1994, the federal government has been reducing its role in the management, operation and ownership of airports.<sup>5</sup>

The National Airports Policy established a system of core airports known as the National Airports System (NAS). This system, which includes 26 airports that handle at least 200,000 passengers per year or serve provincial/territorial capitals, is considered essential to Canada's domestic prosperity and international competitiveness.

While the federal government retains ownership of the NAS airports under the National Airports Policy (except for the Whitehorse, Yellowknife and Iqaluit airports, which have been transferred to their respective territorial governments), it has been transferring them to not-for-profit airport authorities by means of long-term

5 More detailed information on the National Airports Policy and the status of airport divestitures is available on Transport Canada's Web site at <http://www.tc.gc.ca/en/airports.htm>.



FIGURE 10-11: MAP OF AIRPORTS DIVESTITURE, 2000 — REGIONAL/LOCAL AIRPORTS



Source: Transport Canada

FIGURE 10-12: MAP OF AIRPORTS DIVESTITURE, 2000 — SMALL AND ARCTIC AIRPORTS



Note: Arctic airports were transferred to territorial governments in 1995.

Source: Transport Canada

leases.<sup>6</sup> In 1994, the federal government started transferring 149 Transport Canada owned, operated or subsidized airports to local operators.

In 2000, new airport authorities took over the operation of the Halifax International and Jean Lesage International (Quebec City) airports. By the end of the year, Transport Canada was directly involved in the operation and management of three National Airport System (NAS) airports. The location and divestiture status of all the NAS airports is shown in Figure 10-10.

The 1994 National Airports Policy established, in addition to the NAS, four other categories of Transport Canada owned, operated or subsidized airports: regional/local (71 airports), small (31 airports), arctic (8 airports) and remote (13 airports). Figures 10-11 and 10-12 show the divestiture status of the regional/local, small and arctic airports at year end 2000.<sup>7</sup>

As the divestiture program nears completion, and new airport operators gain experience, more emphasis is being placed on the Department's landlord role with respect to the NAS airports leased to Airport Authorities. An enhanced lease monitoring program and specialized training for lease managers is being implemented.

In approving the first transfers to airport authorities in 1992, the federal government required that a major review be carried out after five years of operation. As such, in 1997, Transport Canada began its review of the first four locally based airport authorities to operate NAS airports. The *LAA Lease Review Consultation Report* was released to stakeholders in 1999. The review continued through 2000 and was broadened to include issues common to many of the NAS airports. The overall conclusions remain the same as reported in 1999: the government's decision to commercialize its key airports was a sound one; the 1994 National Airports Policy was a positive step; and some refinements should be considered to ensure the continued effectiveness of the policy. In particular, the review noted deficiencies in transparency relating to pricing practices and financial reporting at some airport authorities. The federal government is developing plans to address these findings.

Many of the NAS airports continued construction projects to improve or expand facilities throughout 2000. Airport improvement fees (AIFs) are being widely used as a means of funding these capital projects. By the end of 2000, all of the airport authorities operating NAS airports

were either collecting airport improvement fees or had announced intentions to do so. Table 10-33 lists the airports that charge airport improvement fees, as well as when they started and the amount collected in 1999.

## FINANCIAL PERFORMANCE

### Airport Authorities' Revenues and Expenses

As noted above, airport authorities operate the majority of NAS airports under leases with the federal government. They are incorporated as not-for-profit organizations with no equity shareholders. They fund their operations and improvements with revenues derived from airport users.

In 2000, 16 airport authorities issued annual reports for the full calendar year 1999. Table 10-34 presents the total results and average ratios for the 16 airport authorities.

TABLE 10-33: AIRPORT IMPROVEMENT FEES AT CANADIAN AIRPORTS

Airport	Charge per Passenger	Date	Amount Collected (\$000) 1999	Collected directly <sup>1</sup>	Collected through tickets <sup>2</sup>
Vancouver <sup>3</sup>	\$5-\$15	May 1993	55,581	X	
Calgary <sup>4</sup>	\$10	Oct. 1997	30,026		X
Edmonton <sup>5</sup>	\$5-\$10	April 1997	13,982		X
Montreal <sup>6</sup>	\$10	Nov. 1997	31,600	X	
Kelowna <sup>7</sup>	\$5	Feb. 1998	1,725		X
Winnipeg <sup>8</sup>	\$10	July 1998	6,616		X
Thunder Bay	\$10	Mar. 1998	1,662	X	
Moncton	\$10	Oct. 1998	1,354	X	
Ottawa	\$10	Sept. 1999	3,860		X
Regina	\$10	Oct. 1999	632		X
St. John's	\$10	Oct. 1999	630		X
Saint John	\$10	Sept. 1999	297	X	
Saskatoon	\$5	Sept. 1999	448		X
Victoria	\$5	Oct. 1999	479		X
London <sup>9</sup>	\$3	April 1999	360	X	X
Charlottetown	\$10	Jan. 2001	-	X	
Halifax	\$10	Jan. 2001	-		X
Quebec City	\$5	Apr. 2001	-		X
Toronto <sup>10</sup>	\$10, \$7	June 2001	-		X

1 Fees collected directly from passengers before embarking.

2 Fees included automatically in the price of each departing ticket due to an airport improvement fee agreement.

3 Vancouver: \$5 for destinations within British Columbia and Yukon; \$10 for other North American destinations, Mexico and Hawaii; and \$15 other international destinations.

4 Calgary: The airport improvement fee from October 1997 to December 1998 was \$5 per passenger and changed to \$10 beginning January 1999.

5 Edmonton: Began at \$5 for destinations within Alberta and \$10 outside Alberta. As of January 2000, the airport improvement fee is \$10 for all destinations.

6 Montreal: Aéroports de Montréal.

7 Kelowna: Unlike Airport Authorities, the City of Kelowna is not obliged to report these amounts to Transport Canada.

8 Winnipeg: The airport improvement fee from July 1998 to September 1999 was \$5 per passenger but changed to \$10 beginning October 1999.

9 London: Starting April 1, 2001 the airport improvement fee will change to \$7 per passenger. Depending on the airline, the fee can be collected directly or through the ticket.

10 Toronto: \$10 for departing passengers and \$7 for connecting passengers.

Source: Airport authority annual reports and Web sites

6 Five airports were transferred in 1992 (prior to the National Airport Policy) to four airport authorities: Vancouver, Calgary, Edmonton and Montreal (Dorval and Mirabel airports).

7 Thirteen remote airports currently receive federal assistance and are not subject to transfer at this time. They are Sandspit, B.C.; Fort Chipewyan, Alta.; Churchill, Man.; Norway House, Man.; Moosonee, Ont.; Iles-de-la-Madeleine, Que.; Lourdes-de-Blanc-Sablon, Que.; Kuujuaq, Que.; Waskaganish, Que.; Chevery, Que.; Wemindji, Que.; Schefferville, Que.; Eastmain River, Que.

**TABLE 10-34: AIRPORT AUTHORITIES FINANCIAL PERFORMANCE, 1999**

(Thousands of dollars)

<i>Financial Information</i>	<i>Toronto</i>	<i>Vancouver</i>	<i>Montreal</i>	<i>Calgary</i>	<i>Edmonton</i>	<i>Ottawa</i>	<i>Winnipeg</i>	<i>Victoria</i>
Aeronautical Revenues	259,287	71,443	59,200	35,769	17,792	18,848	13,756	3,102
Non-Aeronautical Revenues	157,871	174,223	104,705	60,219	34,995	19,636	17,714	4,955
<b>Subtotal Revenues</b>	<b>417,158</b>	<b>245,666</b>	<b>163,905</b>	<b>95,988</b>	<b>52,787</b>	<b>38,484</b>	<b>31,470</b>	<b>8,057</b>
Expenses (less Interest Charges)	316,662	174,864	157,215	61,826	39,105	30,330	23,798	6,392
<b>Income</b>	<b>100,496</b>	<b>70,802</b>	<b>6,690</b>	<b>34,162</b>	<b>13,682</b>	<b>8,154</b>	<b>7,672</b>	<b>1,665</b>
Interest Charges	61,536	21,326	30	0	765	230	0	0
<b>Net Income</b>	<b>38,960</b>	<b>49,476</b>	<b>6,660</b>	<b>34,162</b>	<b>12,917</b>	<b>7,924</b>	<b>7,672</b>	<b>1,665</b>
Acquisition of Capital Assets	367,271	92,766	60,383	67,092	55,189	6,969	9,175	696
Enplaned/Deplaned Passengers (000)	26,690	15,137	9,406	8,102	3,829	3,210	2,748	1,183
<b>Ratios</b>								
Per cent of Operating	75.91	71.18	95.92	64.41	74.08	78.81	75.62	79.33
Per cent of Aeronautical Revenues Vs Total	62.16	29.08	36.12	37.26	33.71	48.98	43.71	38.50
Per cent of Non-Aeronautical Revenues Vs Total	37.84	70.92	63.88	62.74	66.29	51.02	56.29	61.50
<b>Total Revenues per passenger</b>	<b>15.63</b>	<b>16.23</b>	<b>17.43</b>	<b>11.85</b>	<b>13.79</b>	<b>11.99</b>	<b>11.45</b>	<b>6.81</b>
<b>Total Expenses per passenger</b>	<b>11.86</b>	<b>11.55</b>	<b>16.71</b>	<b>7.63</b>	<b>10.21</b>	<b>9.45</b>	<b>8.66</b>	<b>5.40</b>

<i>Financial Information</i>	<i>Saskatoon</i>	<i>Regina</i>	<i>St. John's</i>	<i>Thunder Bay</i>	<i>London</i>	<i>Moncton</i>	<i>Saint John</i>	<i>Charlottetown</i>	<b>Total</b>
Aeronautical Revenues	3,515	1,781	4,496	3,334	2,557	2,199	912	1,206	499,197
Non-Aeronautical Revenues	4,225	2,596	4,620	3,373	3,481	1,897	1,795	2,094	598,399
<b>Subtotal Revenues</b>	<b>7,740</b>	<b>4,377</b>	<b>9,116</b>	<b>6,707</b>	<b>6,038</b>	<b>4,096</b>	<b>2,707</b>	<b>3,300</b>	<b>1,097,596</b>
Expenses (less Interest Charges)	4,722	3,686	6,298	3,833	4,113	4,325	1,904	2,513	841,586
<b>Income</b>	<b>3,018</b>	<b>691</b>	<b>2,818</b>	<b>2,874</b>	<b>1,925</b>	<b>(229)</b>	<b>803</b>	<b>787</b>	<b>256,010</b>
Interest Charges	0	22	49	12	0	74	0	4	84,048
<b>Net Income</b>	<b>3,018</b>	<b>669</b>	<b>2,769</b>	<b>2,862</b>	<b>1,925</b>	<b>(303)</b>	<b>803</b>	<b>783</b>	<b>171,962</b>
Acquisition of Capital Assets	3,417	859	5,039	489	568	10,660	69	365	681,007
Enplaned/Deplaned Passengers (000)	828	754	727	491	386	283	188	155	74,117
<b>Ratios</b>									
Per cent of Operating	61.01	84.21	69.09	57.15	68.12	105.59	70.34	76.15	76.68
Per cent of Aeronautical Revenues Vs Total	45.41	40.69	49.32	49.71	42.35	53.69	33.69	36.55	45.48
Per cent of Non-Aeronautical Revenues Vs Total	54.59	59.31	50.68	50.29	57.65	46.31	66.31	63.45	54.52
<b>Total Revenues per passenger</b>	<b>9.35</b>	<b>5.81</b>	<b>12.54</b>	<b>13.66</b>	<b>15.64</b>	<b>14.47</b>	<b>14.40</b>	<b>21.29</b>	<b>14.81</b>
<b>Total Expenses per passenger</b>	<b>5.70</b>	<b>4.89</b>	<b>8.66</b>	<b>7.81</b>	<b>10.66</b>	<b>15.28</b>	<b>10.13</b>	<b>16.21</b>	<b>11.35</b>

Note: **Aeronautical and Non-Aeronautical Revenues:** Aeronautical revenues are generated principally from airlines and other commercial aviation sources, and consist mainly of landing fees and terminal fees. Revenues from concessionaire sales (stores, restaurants, etc.), car parking, space rental and airport improvement fees are considered non-aeronautical.  
St. John's annual report covers a 13-month period. The figures provided are pro-rated to approximate a 12-month period. Regina, Saint John and Charlottetown transferred during the year 1999. Their 1999 annual reports reflect airport revenues and expenditures from the dates of transfer. The results of Regina and Saint John also include pre-transfer expenditures of airport authorities.

Source: Airport Authority 1999 annual reports

With 74.1 million enplaned/deplaned passengers, these airport authorities generated on average \$14.81 per passenger in revenues and incurred expenses of \$11.35 per passenger in 1999. They spent a total of \$681 million in the acquisition of capital assets.

### Transport Canada's Revenues and Expenses

As Transport Canada transfers airports to airport authorities, its expenditures and revenues from the operation of airports are declining. In 1999/2000, Transport Canada spent \$155.6 million on the operation of airports, while taking in revenues of \$55.3 million. It also received an additional \$214.5 million in rent from eight NAS airport authorities in return for transferring the airport business to airport authorities in the National Airport System on the basis of the rent clauses in the leases with the federal government.

**TABLE 10-35: AIRPORT CAPITAL ASSISTANCE PROGRAM EXPENDITURES BY PROVINCE, 1995/96 – 1999/2000**

(Thousands of dollars)						
Province	1995/96	1996/97	1997/98	1998/99	1999/2000	Total
Newfoundland	-	-	-	-	315	315
Prince Edward Island	-	-	-	-	-	-
Nova Scotia	-	-	-	402	2,702	3,104
New Brunswick	509	885	1,087	4,553	296	7,330
Quebec	-	-	3,203	5,911	1,627	10,741
Ontario	909	3,233	13,465	7,617	2,932	28,156
Manitoba	151	172	970	2,187	3,850	7,330
Saskatchewan	-	2,877	452	1,575	5,103	10,007
Alberta	90	815	1,129	3,017	999	6,050
British Columbia	33	1,417	880	3,307	2,096	7,733
Northwest Territories	-	-	-	-	230	230
Yukon	-	-	-	-	-	-
Nunavut	-	-	-	-	-	-
<b>Total</b>	<b>1,692</b>	<b>9,399</b>	<b>21,186</b>	<b>28,569</b>	<b>20,150</b>	<b>80,996</b>

Source: Transport Canada

### AIRPORT CAPITAL ASSISTANCE PROGRAM

Since April 1995, Transport Canada has administered the Airport Capital Assistance Program (ACAP) to help eligible non-National Airport System airports finance capital projects related to safety, asset protection and operating-cost reduction. To be eligible for this funding, the airports must receive a minimum of 1,000 regularly scheduled passengers annually, meet airport certification requirements, and not be owned by the federal government.

In 2000, the program approved 56 projects at 39 airports for funding at an estimated total of \$47.8 million. Appendix 10-1 lists the projects that received funding approval under the program in 2000 by site and province.

In June 2000, the Airport Capital Assistance Program was renewed and its funding increased to \$190 million over the next five years. Program eligibility was expanded to accommodate the proposed Aircraft Emergency Intervention Services (AEIS) regulations. As a result, airports that will be required by regulations to provide AEIS — and providers of these services — will be eligible to apply for program funding to help cover specified costs associated with implementation.

Table 10-35 summarizes ACAP expenditures by province from 1995/96 to 1999/2000.



**APPENDIX 10-1****AIRPORTS CAPITAL ASSISTANCE PROGRAM — PROJECTS APPROVED IN 2000**

Province	Site	Description	Funded	Project funding in thousands of dollars	
				Site Total	Province Total
Newfoundland	Stephenville	Various Airport Improvements	22.06.00	1,131.7	1,131.7
Prince Edward Island					0.0
Nova Scotia	Yarmouth	Heavy Duty Loader with Attachments	09.08.00	331.0	331.0
New Brunswick					0.0
Quebec	Chisasibi	Heavy equipment purchase	10.01.00	710.0	
	Gaspé	Heavy equipment purchase	14.02.00	432.8	
	La Romaine	Improvements to airport infrastructure	31.03.00	6,600.0	
	Val d'Or	Bird control system	05.07.00	55.2	
	Roberval	Heavy equipment purchase	11.07.00	359.0	
	Val d'Or	Redo roof of airport terminal	11.07.00	35.3	
	La Grande Rivière	Grader replacement	31.08.00	249.4	8,441.7
Ontario	Timmins	Rehabilitation of Airside Electrical	02.06.00	549.7	
	Timmins	Rehab. of Runways 03-21 & 10-28, etc	02.06.00	5,283.1	
	Kingston	Reconstruct ATB Apron & Taxi "B"	11.07.00	2,479.7	
	Windsor	Sand Spreader Truck with Snowplow	18.07.00	91.8	
	Windsor	Rehab. Runway 07-25 & Upgrade Airfield Lighting	28.09.00	2,206.3	10,610.6
Manitoba	Island Lake	Loader Replacement	20.01.00	251.5	
	Island Lake	Snow Blower Replacement	20.01.00	365.0	
	Little Grand Rapids	Grader Replacement	20.01.00	263.0	
	God's Lake Narrows	Snow Blower Replacement	20.01.00	365.0	
	Berens River	Grader Replacement	20.01.00	263.0	
	Berens River	Loader Replacement	20.01.00	251.5	
	Cross Lake	Grader Replacement	20.01.00	263.0	
	Cross Lake	Loader Replacement	20.01.00	251.5	
	Island Lake	Installation of PAPI	01.06.00	169.3	
	God's Lake Narrows	Installation of APAPI	01.06.00	138.6	
	Flin Flon	Airfield Lighting Upgrade	01.06.00	452.9	
	Brandon	Airside Pavement Rehab. and Related Projects	11.07.00	2,619.9	
	Thompson	Replacement of Runway Sweeper	27.09.00	136.7	5,790.9
Saskatchewan	La Ronge	Airside Pavement & Lighting Rehabilitation	14.02.00	4,801.3	4,801.3
Alberta	Lloydminster	Airside Pavement & Electrical Rehab.	18.02.00	2,008.2	
	Grande Prairie	Airside Rehabilitation Projects	01.06.00	2,702.6	
	Edmonton City Centre	Fibre Optic Signs	11.07.00	345.0	5,055.8
British Columbia	Fort St. John	PAPI Installation	26.01.00	181.5	
	Abbotsford	Mobile Equipment - Various	27.01.99	533.0	
	Abbotsford	Runway 07-25 Approach Lighting Upgrade	03.02.00	687.7	
	Cranbrook	Heavy Equipment - Loader & Sweeper	22.02.00	401.3	
	Terrace	Heavy Equipment - Runway Sweeper	23.02.00	163.0	
	Cranbrook	Airfield Electrical Upgrades	29.02.00	878.2	
	Smithers	Replace Snowplow Truck & Snowblower	07.03.00	531.5	
	Cranbrook	Gate Replacement Project	07.03.00	20.7	
	Kamloops	Install ODALS Runway 08-26	07.03.00	299.3	
	Smithers	Apron and Taxiway Rehabilitation	22.03.00	2,151.8	
	Terrace	Runway 33 - ODALS	01.06.00	164.3	
	Kamloops	Ducts and Cables	11.07.00	293.4	
	Prince Rupert	Runway 31 ODALS - Lighting Upgrade	09.08.00	223.7	
	Dawson Creek	Wildlife Control Fence	09.08.00	721.8	
	Fort Nelson	Runway Sweeper	09.08.00	206.6	
	Fort Nelson	Snowplow Truck/Reversible Plow Blade	09.08.00	166.2	
	Nanaimo	Wildlife Control Fence	10.08.00	196.4	
	Terrace	Replacement of Snowblower	10.08.00	405.6	8,226.0
Northwest Territories	Sachs Harbour	Rehab. Runway 08-26, Taxi "A" and Apron, etc.	21.07.00	1,680.2	1,680.2
Yukon					0.0
Nunavut	Arviat	Runway Snowblower Rehabilitation	07.03.00	213.5	
	Rankin Inlet	Runway Plow Truck Replacement	07.03.00	234.0	
	Rankin Inlet	Runway Sweeper Replacement	07.03.00	213.0	
	Whale Cove	Replacement of Airfield Lighting	27.03.00	436.5	
	Coral Harbour	Runway Plow Truck Replacement	04.04.00	234.0	
	Qikiqtarjuaq	Replacement of Airfield Lighting	05.04.00	449.0	1,780.0
				Total	47,849.2

Source: Transport Canada

# STRUCTURE OF THE 11 TRANSPORTATION INDUSTRY

*In 2000, new shortline railways were created. Mergers and acquisitions were observed in the trucking industry. In the bus industry, the financial situation of Laidlaw, a major school bus operator and the largest scheduled carrier, attracted attention. The trend toward increased concentration in liner shipping continued. In the air industry, airline restructuring received extensive media coverage.*

Competitive forces shape the evolution of the market structure of each mode of transportation. Factors such as price changes, financial results and changes in traffic levels are factors that come into play to explain the structure of each modal transportation industry.

This chapter presents an overview of Canada's transportation industry in the five modes — rail, trucking, bus, marine and air. It highlights the major events, including legislative changes.

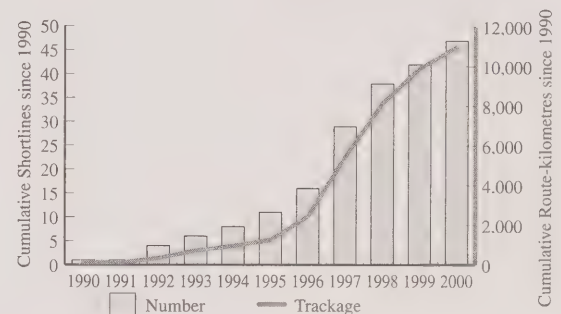
## RAIL INDUSTRY

In large measure, the structure of the Canadian rail industry changed only modestly during 2000 compared with 1999. This is in marked contrast to the pace of change seen over the previous four years. Whether this is a signal that the restructuring of the rail system in Canada has plateaued remains to be seen.

As has been well documented, the Canadian rail system for many years consisted of the two Class I carriers, CN and CPR, along with a handful of regional carriers and a series of carriers conducting relatively limited operations.<sup>1</sup> This situation began to change during the late 1980s and early 1990s, when a small number of shortline<sup>2</sup> railways began operations. The number of new shortlines being created clearly began to accelerate with the introduction of the *Canada Transportation Act* in 1996, as is shown in Figure 11-1.

Since 1990, over 45 new railways have appeared, 16 at the federal level and 30 under provincial regulatory jurisdiction. These new railways have almost 11,000 route-

FIGURE 11-1: SHORTLINE INDUSTRY GROWTH, 1990 – 2000



Source: Transport Canada

kilometres of track and account for approximately \$170 million in annual revenues, which represents about 2.2 per cent of total Canadian rail revenues for 1999. The majority of the increase in shortline trackage (60 per cent) belongs to the provincially regulated railways formed since 1990, while the majority of the revenues (60 per cent) recorded went to the new federally regulated railways.

Although several new shortlines were created during 2000, there was only marginal change in the ownership structure of the shortline sector. A small Ontario carrier was exchanged among a number of the principal shortline corporations.<sup>3</sup> This did not, however, change the overall complexion of concentration in the shortline sector, where five corporations — RailAmerica Inc., OmniTRAX, Société des Chemins de fer du Québec, Genesee-Wyoming and Iron Road — controlled almost 85 per cent of the revenues earned by the 21 shortlines created since 1990 that they own.

1 Terminal and switching railways as well as US carriers operating into Canada.

2 The use of the term "shortline" railway developed in the United States following the passage of the *Staggers Rail Act* in 1980, which encouraged restructuring of the US rail system and led to the rapid formation of the shortline sector with almost 500 entrants.

3 RailAmerica transferred one of its properties (the L'Orignal) to the Société des Chemins de fer du Québec, with the former now controlling eight Canadian railways at the federal and provincial level and the latter now controlling five railways.

The structure of the rail passenger sector has remained unchanged for many years, with VIA Rail continuing to provide the bulk of the service offered in Canada. VIA Rail has about 95 per cent of the passenger-related activity (in terms of numbers of passengers carried and passenger-kilometres generated) and passenger-related revenues. Although it owns relatively little track itself (approximately 217 route-kilometres), VIA Rail has extensive running rights over other railways, principally CN.<sup>4</sup> Less extensive passenger services are offered by the Ontario Northland Railway, the Algoma Central Railway, the Quebec North Shore & Labrador Railway and BC Rail, while the Great Canadian Railtour operates seasonally between Vancouver, Calgary and Jasper. Amtrak, the US passenger rail corporation, offers service to several Canadian cities (Montreal and Vancouver, as well as Toronto in co-operation with VIA Rail) from its US network.

Perhaps the most noteworthy event during 2000 concerning the rail industry's structure was the decision of the US Surface Transportation Board to effectively sideline the proposed Canadian National/Burlington Northern Santa Fe combination by placing a moratorium on rail mergers in the United States until June 2001, at which time the STB is expected to issue guidelines for future mergers in the rail sector.

In August 2000, the city of Toronto acquired Union Station from CN and CPR. The federal government has committed \$35 million towards the redevelopment of the station. Of this amount, \$10 million would be contributed by VIA Rail, while the balance would be from funds previously provided to VIA's Asset Renewal Fund.

## TRUCKING INDUSTRY

The trucking industry plays a significant role in the Canadian economy, accounting for substantial revenues and jobs across the country. Recent estimates indicate annual revenues of approximately \$42.7 billion in 1999. There are an estimated 316,000 people working in trucking activities. There are also people working in other industry sectors who provide services to the trucking industry.

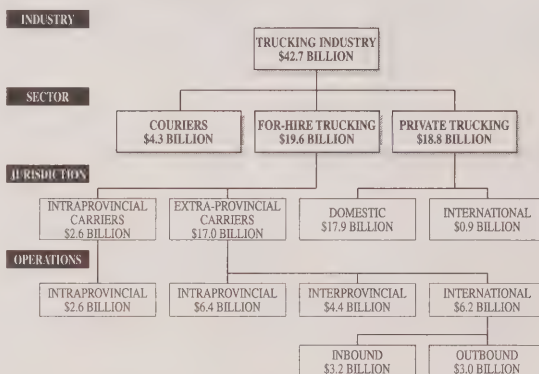
Intraprovincial activities — that is, transportation services offered strictly within a province — fall under provincial jurisdiction. Interprovincial activities pertain to transportation services offered from one province to another, while international activities refer to transportation services offered from a province to another

country. Both interprovincial and international activities fall under federal jurisdiction and are often referred to as extraprovincial trucking. Extra-provincial trucking activities accounted for \$17 billion in 1999, 86 per cent of total for-hire trucking revenues, but a significant part of these revenues, 38 per cent, were derived from intraprovincial operations.

There are 3.7 million trucks registered in Canada, many of which are pickups, vans and other small vehicles. Over 660,000 are trucks with a registered weight of 4.5 tonnes or more. Of these, approximately two-thirds haul freight commercially; these range from two- and three-axle straight trucks to 18-axle tractor-trailers. The other trucks are used in private trucking activities, including farming, government operations and a wide variety of utility and service functions.

Figure 11-2 shows the structure and revenues of the trucking industry in 1999.

**FIGURE 11-2: TRUCKING INDUSTRY STRUCTURE AND REVENUES, 1999**



Source: Statistics Canada, Cat. 53-222; "Profile of Private Trucking in Canada," L.P. Tardiff Associates, Jan. 1998; "Canadian Courier Market Size, Structure and Fleet Analysis Study"; Infobase Marketing Inc., January 2001

## MAJOR EVENTS IN 2000

### INTERNAL TRADE AND NATIONAL HARMONIZATION

In accordance with the provisions of the *Agreement on Internal Trade* calling for the elimination of economic controls on trucking, Part III of the *Motor Vehicle Transport Act* was repealed on January 1, 2000, following extensive consultations with provinces and stakeholders. This eliminated the possibility of any economic controls being imposed on extra-provincial truck operators. The

4 VIA Rail operates over about 9,430 kilometres of CN track, 540 kilometres of CPR track and 2,740 kilometres of track owned by various shortlines.



last vestiges of provincial economic regulation of intraprovincial trucking expired at the same time. Trucking is no longer subject to entry or tariff control regulation in any part of Canada.

## NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

NAFTA's Land Transportation Standards Subcommittee (LTSS)<sup>5</sup> for truck operations completed work on a number of driver standards issues through a series of agreements on operating requirements. Further work toward the compatibility of vehicle, driver and operator standards continued during 2000. Discussions focused on issues such as motor carrier safety performance, rule-making activities, the development of a directory of safety officials and contact procedures, dangerous goods standards, and the publication of a North American Emergency Response Guidebook.

On November 29, 2000, the NAFTA Arbitration Panel issued a confidential interim ruling rejecting the US law that prevents Mexican trucks from operating in the US beyond 20 miles of the US-Mexico border.

On February 7, 2001, the NAFTA Arbitration Panel issued a final ruling that clears the way for Mexican trucks to obtain operating authority to operate in the US beyond the current restriction of operating within 20 miles of the US-Mexico border. In summary, the ruling stipulated that

- The US should look at applications on a case-by-case basis to determine if the Mexican carriers meet US safety standards;
- The US is entitled to set its own motor carrier safety standards and ensure that Mexican trucking companies and truck drivers meet those standards;
- If there are differences between US and Mexican regulatory regimes, the US does not have to treat applications from Mexico the same as those from Canada or the US.

The US and Mexico must now agree on a set of comprehensive motor carrier safety standards, establish and test effective enforcement programs and staff border facilities with full-time inspectors.

## VEHICLE WEIGHTS AND DIMENSIONS

In Canada, an interjurisdictional Task Force on Vehicle Weights and Dimensions Policy, reporting to the Council of Deputy Ministers Responsible for Transportation and

Highway Safety, deals with the question of vehicle size and vehicle weights. The task force looks at co-ordinating policy through collective action and acts as a forum for the exchange of information on provincial initiatives.

After several years of discussion, Ontario and Quebec reached an agreement in 2000 on harmonizing weight and dimension limits for specific tractor-trailer configurations that commonly operate between the two provinces. The new limits will result in safer and more stable vehicles that contribute less wear to highway infrastructure. The agreement also simplifies vehicle standards, thus facilitating fleet management, increasing competitiveness and facilitating compliance.

Newfoundland and Labrador, New Brunswick, Nova Scotia and Prince Edward Island developed a proposal for uniform vehicle weight and dimension regulations within Atlantic Canada. Consultations were held with stakeholders in early 2000, and a proposed agreement was drafted and sent to the four governments for consideration and endorsement.

In western Canada, Manitoba, Saskatchewan, Alberta and British Columbia have been working closely with stakeholder groups to develop a proposal for harmonization of special permit requirements within western Canada for heavy haul and overweight loads and to develop common requirements for movement of specialized equipment under permit.

## INDUSTRY EVENTS — ALLIANCES/MERGERS

Every year, a number of mergers and acquisitions of motor carriers takes place, and 2000 was no exception. Among those involving some of the larger Canadian carriers are the following:

- **TCT Logistics** of Calgary purchased Kleysen Transport's van and temperature-controlled highway transport operation and the Tri-Line Trucking Group. The Tri-Line Group provides full load van and flatbed trailer services and has annual revenues of \$130 million. Kleysen's operations generate \$45 million annually from 180 trucks, of which 48 are company-owned and 132 are owner-operated, and 375 trailers. The sale of Kleysen's van operation was viewed by Kleysen's President and Chief Operating Officer, Tom Kleysen, as a strategic move that will allow the company to focus on areas where its existing transportation business has higher growth and profit potential and where it already has a strong market niche.

5 A committee mandated to develop compatible technical standards to improve safety and efficiency of bus and truck operations, rail operations, and the transportation of dangerous goods. The three parties to the Agreement also established a Transportation Consultative Group (TCG) to address non-standards-related issues (i.e. cross-border operations and research and development).



- **Kleysen Transport Ltd.**, as part of its move to become an integrated transportation solutions company, is expanding its flatdeck, bulk and intermodal operations, and its repair and maintenance business. It invested \$6 million in its Calgary Distribution Centre and fleet services facility and an additional \$4.2 million in its Kayway Fleet Services facility in Winnipeg. The facility is one of the largest in western Canada, providing everything from tires and engine overhauls to bodywork and metal fabrication.
  - **Kayway Logistics**, the third-party logistics affiliate of Kleysen Transport, and Crosslink Distribution, of Tibbett and Britten, have merged their operations. The move will help Kayway to develop improved supply chain processes to the retail grocery market.
  - **TransForce Inc.** of Saint-Laurent, Quebec, acquired Entreprises R.R. Mondor, a company specializing in flatbed transport in the domestic and transborder markets. Entreprises R.R. Mondor will be a wholly owned subsidiary of TransForce, retaining its current name and management structure. This acquisition will add approximately \$13 million in sales to TransForce, as well as a fleet of about 100 tractor-trailers. TransForce and its subsidiaries form a network of less-than-truckload (LTL), truckload, logistics and warehousing operations across Canada and the United States.
  - **TransForce Inc.** also acquired all the shares of DCA Express 24 Inc. and Distribution de Colis les Appalaches Inc., two companies specializing in express delivery of parcels and envelopes, primarily in Quebec, Ontario and the Maritimes. Their yearly sales are close to \$10 million and their combined fleets have some 150 units. Both companies join TransForce as wholly owned subsidiaries and will operate independently under their existing names.
  - **Clarke Inc.**, of Etobicoke, Ontario, and Canadian National (CN) Railway Company, launched a third-party joint venture that offers shippers seamless rail and over-the-road freight transportation and logistics services throughout North America. Clarke Logistics Inc. allows CN to offer shippers one-stop shopping for freight shipments to and from all points in Canada, the United States and Mexico. This will strengthen Clarke's existing intermodal and highway brokerage business between the three countries.
  - **Trimac Transportation Services Corp.** of Calgary acquired Ross Trucking Ltd. of Boiestown, New Brunswick, a transporter of woodchips and related forest products servicing markets in Quebec, the Maritimes and the northeastern United States. The acquisition will further enhance Trimac's presence in both the forestry products industry and the Maritimes.
- In transborder operations, in addition to mergers with or acquisitions of US-based carriers, Canadian carriers use partnerships with US-based carriers to penetrate the US market. These alliances not only expand the carriers' market, they allow the carrier to redesign the way the Canada-US market is served, allowing, for instance, the carrier to offer such services as overnight, next-day and second-day delivery over a much broader territory. Such alliances can also lead to the integration of carriers' information systems and the sharing of invoicing and inventory control systems. A number of mergers, acquisitions and alliances of carriers on both sides of the Canada-US border took place in 2000. Some examples include:
- **Trimac Transportation Services Corp.** sold its truck-leasing subsidiary Rentway to Penske Truck Leasing of Reading, Pennsylvania, for \$105 million, giving the US company an immediate presence in the Canadian truck rental business and allowing Trimac to focus on its bulk trucking business.
  - **Trimac Transportation Services Corp.** acquired Initial DSI Transports Inc. of Houston, Texas, for US\$68 million. DSI is a hauler of chemicals, petroleum and dry bulk products, with annual revenues of US\$156 million in 1998. The company has 34 terminals in the United States and operates a fleet of more than 900 tractors and 1,350 trailers. This acquisition will provide opportunities for growth and improved operational efficiencies due to the complementary nature of Trimac's existing US terminal locations and traffic lanes.
  - **Clarke Inc.** acquired a distribution facility in Los Angeles and opened new offices in Mexico City and Queretaro, Mexico. Increased trade between Mexico and Canada, as well as increased demand within North America for premium-service expedited freight services, prompted the move. Clarke wants to be strategically located to capture new growth opportunities in this region.
  - **Con-Way Canada Express**, headquartered in Mississauga, Ontario, was formed in January as a separate operating unit of US-based Con-Way Transportation Services to meet the growing demand for less-than-truckload (LTL) services within Canada and throughout North America. It expanded its operations into five more provinces in June 2000 and has direct LTL services to 22 of the 25 major urban centres in Canada. Company spokespeople say that this increased coverage in Canada will allow four-day delivery between the major urban areas on both coasts. Drivers employed by Con-Way Central Express, the company's US parent, drive the goods to Canada, and

Con-Way Canada drivers then pick up the trailers for final delivery across the country. Increased customer demand, NAFTA, and growth in just-in-time delivery, were all factors in this decision to expand.

A significant business activity emerging in the trucking industry is the combining and streamlining of various companies' logistics operations. Supply chain integration is important because it allows smoother operations and greater efficiency while improving customer satisfaction. Companies are finding new and innovative ways to store, move and deliver products, services and information. Third-party logistics firms (3PLs) have become enablers for the complex task of integration. As a result, many shippers seek out the services of 3PLs to improve their overall supply chain performance. Some examples of this new business activity include the following:

- Six of the largest truckload carriers in the United States agreed to combine their logistics operations into a new Internet-based transportation logistics company called **Transplace.com**. The on-line venture is aimed at creating a one-stop shopping centre for transportation services by merging the non-asset logistics services of J.B. Hunt Transport Services, Werner Enterprises, Swift Transportation, M.S. Carriers, US Xpress Enterprises and Covenant Transport. The business will use Web technology to better match freight-hauling capacity and demand, and will function as a clearinghouse, or exchange, where shippers and carriers can see and bid on loads. Last year, these six carriers had total revenues of US\$5.9 billion. Initially, Transplace intends to focus on truckload, refrigerated and intermodal capabilities but will expand its services to include less-than-truckload, package and parcel, air, cartage and home delivery by forming partnerships with other companies throughout the world.
- **General Motors Inc.** and **CNF Transportation** formed a joint-venture logistics company called Vector SCM, which has the objective of eventually taking control of GM's entire \$6 billion annual transportation spending. Vector is to have total responsibility for GM's logistics around the world, with a transition planned in steps, the first being GM's North American logistics operations. All existing logistics contracts with GM are to be transferred to Vector. Transportation decisions to be dealt with by Vector and submitted to GM logistics range from ocean, air, truck, warehousing, freight-bill auditing and any other part of the supply chain where cost savings can be generated. The objective is to cut current inventory, worth billions of dollars, by 50 per cent.

## TRUCKING ISSUES IN 2000

**Insurance** — Insurance costs continued to increase on both sides of the Canada-US border in 2000, forcing trucking companies to take a closer look at loss-prevention strategies and risk-management practices to ease rising insurance costs.

**Hours of Service Regulations** — Canada and the United States both introduced preliminary proposals to change the regulations that place limits on the number of hours that truck drivers can be on the road. The American proposals, which are significantly more complicated, are under considerable opposition and on hold until October 2001. In Canada, the proposed changes to the National Safety Code Hours-of-Service Standard are being drafted and will be submitted for public consultations. Amendments to the regulations will be made only after the approval of the new standard, sometime in 2001.

**Diesel Fuel Prices** — Road diesel price increases started in the third quarter of 1999 and continued until the second quarter of 2000. Prices stayed at these high levels throughout the rest of 2000. These increases sparked protests in some regions of the country and resulted in the creation of at least two new owner-operator associations. Owner-operator groups, particularly in Ontario, sought government intervention to ensure that they benefited from the fuel surcharges negotiated between large carriers and shippers.

Several provincial governments sought to encourage dialogue among owner-operators, shippers and carrier groups to resolve the fuel surcharge and related compensation and working condition issues. Ontario established the Ontario Truck Industry Working Group (OTIWG), which, in October 2000, was successful in developing fuel surcharge guidelines, including a formula for calculating fuel surcharge rate increases. The National Trucking Alliance (NTA) accepted this solution. The OTIWG has also developed a proposal for creating a dispute resolution office to deal with disputes between owner-operators and carriers. The province wants a temporary, two-year informal and voluntary dispute resolution process.

Newfoundland provided seed money for a provincial owner-operator association in February 2000 and facilitated meetings with shippers and carriers that resulted in agreement on a fuel surcharge. Quebec established a *Comité des experts* to mediate owner-operator issues in 1999 and has been trying, so far unsuccessfully, to establish a permanent trucking forum with carrier, shipper, union and owner-operator representatives to deal with owner-operator issues.



The Port of Vancouver responded to owner-operator pressures, partly arising from waiting times, by enacting a licensing system for truck access in 1999. This system included provision for an hourly wage rate for truckers while working in the port. This move was bitterly opposed by the carriers and the provincial carrier association. The hourly wage provisions of the scheme, however, were abandoned in December 2000.

**Driver Shortage** — Trucking companies in Canada, as in the United States, face the growing problem of a shortage of drivers. This issue is driven by a number of factors: the trucking sector has typically been associated with relatively low wages that are, on average, about two thirds of those in the rail sector; there is an aging workforce; the traditional pool from which drivers were recruited (individuals with limited post-secondary education) is eroding and no longer large enough to meet demands; the required qualifications are more demanding due to the increasing use of sophisticated technology and the increased focus on safety compliance; and there is better paying and less demanding work elsewhere in a strong economy with relatively low unemployment.

The driver shortage issue, according to industry sources, has to do not only with pay considerations but also with lifestyle issues. In an effort to attract and retain drivers in the United States, some companies have started to offer free Internet and cable access and better amenities at truck stops, as well as to allow team driving to permit spouses or other family members to accompany drivers. The challenge for the industry is to ensure that working conditions, wage levels and training opportunities are compatible with the need for higher skills demanded of drivers.

**Michigan Single Business Tax** — Effective January 1, 2000, after a moratorium of several years, the Michigan Single Business Tax (SBT) was revived against foreign transportation companies providing services into Michigan from a foreign base. Because of the significant impact this tax would have on Canadian carriers, the trucking industry, in co-operation with the federal and provincial governments, entered into discussions with Michigan state authorities concerning the application of the tax to the Canadian trucking industry.

The Single Business Tax base, on which the tax is calculated, consists of three main components: a company's net income; the compensation and benefits paid to the company's employees; and all capital items such as depreciation, interest dividends and royalties. A company must apply this tax base to the relative

importance of its activities occurring in Michigan, the basis being revenue miles. The tax is applied after a standard exemption of \$45,000.

In a measure specifically enacted for the benefit of Canadian trucking firms, the State of Michigan revised its SBT legislation on December 11, 2000, to provide favourable treatment to Canadian carriers. Under the new law, Canadian carriers are given two choices for reducing the amount of employee compensation included in the tax base: reduce compensation paid to employees by a flat 50 per cent; or use a formula whereby the compensation is multiplied by the allocation of revenue miles travelled in Michigan.

It is estimated that the new law will reduce the tax base, on average, by 35 per cent for Canadian carriers.

**Trade Corridors** — Canadian interest in corridor and border issues has increased in recent years, prompted by strong growth in trade with the United States and Mexico. The US *Transportation Equity Act for the 21st Century* (TEA-21) has also served to focus attention on borders and trade corridors. A significant development has been the emergence of public-private international alliances that act as advocates for specific corridors and also help facilitate initiatives to promote optimum corridor use.

Transport Canada is working with various agencies and departments to develop a coherent national approach to transportation corridors. The underlying premise is to ensure a degree of co-ordination among various programs, initiatives and policies that have a bearing on this area. One of the underlying principles guiding this effort is that of bi-national collaboration. In addition to working closely with other Canadian agencies, Transport Canada maintains an ongoing dialogue with its US counterparts. Recent discussions have focused on the need to co-ordinate efforts in areas related to border gateway infrastructure, deployment of transportation technology, interoperability of Intelligent Transportation Systems (ITS) and collaboration on research and data collection.

**Information Technology/E-commerce** — E-commerce is expected to have a significant impact on distribution patterns and, by extension, on the role of the trucking industry. E-commerce requires participants to embrace information technology systematically. It also requires a degree of standardization in information technology, which at present is uneven among carriers.

## CHARACTERISTICS OF THE TRUCKING INDUSTRY

Trucking is a highly diversified industry of more than 13,700 freight carriers, including 10,800 for-hire carriers with annual revenues exceeding \$30,000, 500 private carriers with annual operating expenses exceeding \$1 million, and 2,400 courier companies. These numbers do not include small for-hire carriers earning less than \$30,000 annually, small private carriers with less than \$1 million in operating expenses, or organizations such as farms, utility companies and municipalities that own and operate trucks. Another 40,000 owner-operators with annual revenues exceeding \$30,000 contract services to both private and for-hire carriers or operate independently.

A number of factors differentiate trucking firms:

- their size, which can be defined in numerous ways, such as the number of power units operated;
- the type of equipment they use, such as logging trucks, hopper-bottom grain trailers, cement mixers, general purpose vans, flatdeck trailers;
- the geographic coverage of their operations, whether intraprovincial, interprovincial or international, such as to and from the United States;
- the type of services they offer, whether, for example, truckload service (full load/single shipper) or less-than-truckload service (multiple shipments from multiple shippers); and
- the intramodal and/or intermodal alliances they have.

The trucking industry offers two major types of services: for-hire trucking and private services. For-hire trucking services are transportation services offered in return for compensation. They can be further broken down in terms of truckload (TL) or less-than-truckload (LTL) services, but a firm can also offer a mix of the two and can offer to operate in domestic or international markets. For-hire trucking services can be further categorized according to the types of freight carried, notably:

- *General freight carriers*, which handle different types of freight in vans and general-freight trailers;
- *Household goods carriers*, which use specialized trailers to transport furniture and other personal household possessions;
- *Liquid bulk carriers*, which use tanker trucks to transport liquids such as petroleum, milk and chemicals;
- *Dry bulk carriers*, which use dump or hopper-bottom trailers to haul goods such as grain, fertilizer and gravel;

- *Forest products carriers*, which use special logging trucks to transport logs from the forest to the mill; and
- *Other specialized freight carriers*, which include auto haulers using special trailers to transport vehicles to the dealerships, and couriers that use a variety of types of trucks to transport small parcels and mail.

Table 11-1 compares the revenues of for-hire trucking firms by the type of freight carried.

**TABLE 11-1: FOR-HIRE CARRIER REVENUES BY MARKET SEGMENT, 1997 – 1999**

	Revenue (Millions of dollars)			Per cent of total		
	1997	1998	1999	1997	1998	1999
General Freight	8,363.0	8,902.0	10,064.4	58.6	59.8	62.2
Dry Bulk	971.0	1,091.8	1,189.6	6.8	7.3	7.4
Liquid Bulk	1,235.0	1,069.6	1,013.1	8.7	7.2	6.3
Forest products	794.1	721.4	828.8	5.6	4.8	5.1
Housegood Movers	523.2	454.8	466.6	3.7	3.1	2.9
Other Specialty Freight	2,385.0	2,648.5	2,618.3	16.7	17.8	16.2
<b>Total</b>	<b>14,271.3</b>	<b>14,888.1</b>	<b>16,180.7</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Note: For-hire trucking firms with annual earnings of \$1 million or more.

Source: Statistics Canada, "Annual Supplement (Q5) Survey, 1997–99

Private trucking services are transportation services offered by a company that is transporting its own goods. They are an integral part of a company's distribution network, often providing a logistical support service to the companies that own them. These companies tend to be retail distributors for consumer goods, chemical products producers, pulp and paper companies, beverage distributors and wholesale distributors of agricultural products.

In addition to carrying their own goods, private carriers, especially those looking after long haul needs with their tractor-trailers, can obtain operating authorities to haul goods on a for-hire basis for others. With such operating authorities, they in fact compete with for-hire trucking firms. Furthermore, these companies with private truck fleets can also use for-hire carriers for some of their freight transport needs. The differences between private and for-hire carriers are becoming increasingly blurred as private carriers compete with for-hire carriers for loads on their back haul trips to reduce their empty kilometres.

## MAJOR COMPONENTS OF THE TRUCKING INDUSTRY

General freight carriers dominated the for-hire sector, accounting for over 60 per cent of for-hire revenues in 1999.



TABLE 11-2: TOP 50 FOR-HIRE CARRIERS BASED ON NUMBER OF VEHICLES, 2000

Rank	Name of Carrier	Total Vehicles <sup>1</sup>	Total Employees	Rank	Name of Carrier	Total Vehicles <sup>1</sup>	Total Employees
1	TransForce	4,930	2,525	20	Gerth Transport	2,041	680
	- Cabano Kingsway Transport	2,338	1,550	21	Tri-Line Group	1,820	812
	- Groupe Papineau	1,518	509		- Tri-Line Expressways	1,667	671
	- Thompson's Transfer	453	238	22	XTL Transport	1,785	680
2	Trimac Transportation Services	4,435	2,416	23	Reimer Express Lines	1,668	1,717
3	SLH Transport	3,795	1,050	24	TCT Logistics	1,664	1,450
4	Paul's Hauling Group	3,757	1,669	25	Bison Transport	1,648	721
	- Paul's Hauling	1,221	352	26	TST Solutions Inc. Group	1,614	1,474
	- Westcan Bulk Transport	1,593	507	27	Vitran Corp.	1,604	1,022
	- Gardewine North	943	810	28	Wilson's Truck Lines	1,556	400
5	TransX	3,751	1,864	29	SGT 2000	1,532	635
6	Mullen Transportation Inc.	3,530	2,109	30	FTI Inc. Canada	1,500	330
	- Mullen Trucking	1,049	776	31	Canada Cartage System	1,383	668
	- Cascade Carriers	632	248	32	H&R Transport	1,380	1,075
	- Grimshaw Trucking	443	268	33	Arnold Bros. Transport	1,376	759
	- Mill Creek Motor Freight	855	522	34	Landtran Systems	1,374	770
7	Contrans Corp.	3,520	1,655	35	Yanke Group	1,357	845
	- Brookville Transport	1,222	585	36	Verspeeten Cartage	1,347	473
	- Laidlaw Carriers	1,692	842	37	Kleysen Transport	1,345	800
	- Christie Transport	403	147	38	Bruce R. Smith Ltd.	1,335	480
8	Robert Transport/Groupe Robert	3,390	1,745	39	Hunterline Group	1,269	472
9	Clarke Inc.	3,325	1,900		- Hunterline Trucking	426	342
10	J.D. Irving Ltd.	3,070	2,144		- Front Runner Freight	843	N/A
	- Midland Transport	1,570	1,413	40	Erb Group of Companies	1,262	1,021
	- RST Industries	470	226		- Erb International	473	191
	- Sunbury Transport	1,030	505		- Erb Transport	789	830
11	Day & Ross Transportation Group	2,936	3,761	41	Guilbault Transport Group	1,249	665
	- Day & Ross	1,959	2,146	42	Manitoulin Transport Group	1,201	N/A
	- Fastrax	420	239		- Manitoulin Transport	701	N/A
12	Schneider National Carriers Canada	2,800	765	43	Cooney Group	1,175	330
13	Westminster Holdings	2,560	2,030	44	Quik X Transportation	1,170	880
	- Highland Transport	2,175	655	45	Thibodeau Transport Group	1,158	644
14	Armour Transportation System	2,371	1,349	46	Purolator Courier	1,123	13,022
15	Allied Systems Canada	2,300	1,560	47	Canadian American Transportation	1,053	383
16	Challenger Motor Freight	2,116	760	48	Penner International	1,038	333
17	BLM Group Inc.	2,089	1,350	49	Seaboard Liquid Carriers	980	N/A
18	Kindersley Transport Group	2,086	1,021		- Harmac Transportation	650	275
	- Kindersley Transport	1,668	838	50	Kriska Transportation	964	461
19	Canadian Freightways Group	2,080	N/A				
	- Canadian Freightways	1,082	N/A				

Note: The data are presented as in the source. Data does not always add up to the total because some of the smaller subsidiaries are excluded due to lack of information. Some of the mergers described earlier in this section were not included in the article as it was published prior to the takeover.

1 Total Vehicles includes trucks, tractors and trailers, including owner-operator equipment, domiciled in Canada.

Source: Today's Trucking, March 2000, "Canada's Top 100 For-Hire Fleets, 2000."

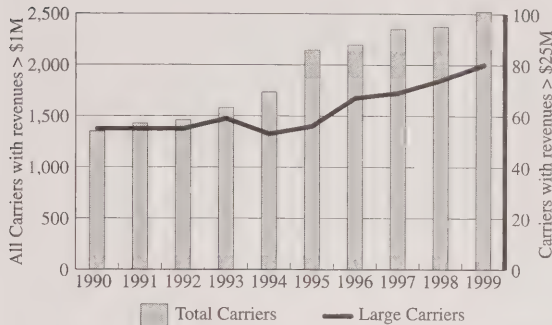
Table 11-2 ranks Canadian-based for-hire trucking firms based on the size of their fleet. The Table also shows the number of employees for each company and their affiliates.

Figure 11-3 presents the number of for-hire carriers earning annual revenues of \$1 million or more between 1990 and 1999. The total number of for-hire carriers has increased since 1990. Part of this increase is due to a new frame used by Statistics Canada since 1995 to conduct its trucking survey. The number of very large carriers; those with more than \$25 million in annual revenues, has fluctuated between 55 and 80 over this period.

Table 11-3 shows the percentage share of total for-hire trucking revenues by size of carrier from 1991 to 1999 under the following categories: carriers that earn \$25 million or more annually; \$12 to \$25 million; \$1 million to \$12 million; and less than \$1 million.

From 1991 to 1995, revenues generated by carriers earning more than \$25 million as a percentage of total industry revenues steadily decreased, while the actual number of carriers in this category remained relatively stable. This suggests a decreased level of concentration of the industry over that period. The proportion of their revenues to total industry revenues declined from

**FIGURE 11-3: NUMBER OF FOR-HIRE TRUCKING CARRIERS EARNING ANNUAL REVENUES OF \$1 MILLION OR MORE, 1990 – 1999**



Source: Statistics Canada, Annual For-Hire Carriers Survey, 1990–1993; Annual Supplement (Q5) and the Quarterly Motor Carriers of Freight Survey, 1994–1999

33 per cent in 1991 to 25.1 per cent in 1995. This proportion remained stable at 25.7 per cent over the next two years then increased to 28.2 per cent by 1999 reflecting the increased level of acquisitions and mergers in the trucking industry over the past two years.

Over the same period, 1991 to 1995, there was a corresponding increase of 10 per cent in the share of revenues generated by carriers earning between \$12 million and \$25 million. This proportion has decreased somewhat over the last two years from 21.8 per cent in 1997 to 16.7 per cent in 1999.

The share of total industry revenues earned by carriers making between \$1 million and \$12 million fluctuated around 40 per cent between 1991 and 1999. The small carriers earning less than \$1 million saw their share of industry revenues increase to 17 per cent in 1999.

## COURIERS

In 2000, the total Canadian courier market, which is defined as all letters, envelopes, paks (plastic pouches designed to accommodate large documents or small parcels) boxes and cartons originating within Canada, had an estimated \$4.7 billion in revenues. Approximately 2.1 million packages were handled by the courier industry each day and the average revenue per package was \$8.88.

The courier industry has two major segments:

- *Overnight or later delivery shipments* are delivered at least one day following the day they are picked up. This segment was valued at \$4.0 billion and carried 1.6 million packages per day in 2000, this segment representing 85 per cent of total courier revenues and 78 per cent of volume. This segment is highly concentrated among nine major carriers, which together represent 85 per cent of overnight or later revenues. These carriers include: Canada Post, Canpar, DHL, FedEx Express, FedEx Ground, Loomis, Purolator, TNT Express Worldwide and United Parcel Service.
- *Sameday messenger delivery shipments* are delivered the same day they are picked up. This segment was valued at \$687 million and carried 446,000 packages per day in 2000, representing 15 per cent of total courier revenues and 22 per cent of volume. This market is highly fragmented, with the top nine companies accounting for less than 20 per cent of total sameday messenger revenues.

The domestic lane, or those packages associated with shipments that originate and are delivered to locations in Canada, accounts for the majority of courier business in Canada. In 2000, the domestic portion of the industry

**TABLE 11-3: DISTRIBUTION OF TOTAL FOR-HIRE TRUCKING REVENUES BY SIZE OF CARRIER, 1991 – 1999**

Year	Medium Carriers (\$1 – 12 million)		Large Carriers (\$12 – 25 million)		Top Carriers (Over \$25 million)		Small Carriers (Less than \$1 million)		Grand Total Revenue (millions of dollars)
	Revenue (millions of dollars)	Share (per cent of total)	Revenue (millions of dollars)	Share (per cent of total)	Revenue (millions of dollars)	Share (per cent of total)	Revenue (millions of dollars)	Share (per cent of total)	
1991	4,028.8	40.3	1,107.6	11.1	3,298.2	33.0	1,562.4	15.6	9,997.0
1992	4,217.4	41.8	1,072.2	10.6	3,256.1	32.3	1,537.3	15.2	10,082.9
1993	4,542.9	41.0	1,268.0	11.4	3,411.1	30.8	1,868.2	16.8	11,090.2
1994	5,212.8	40.4	2,208.5	17.1	3,541.4	27.5	1,929.9	15.0	12,892.6
1995	5,460.6	38.3	3,090.0	21.7	3,576.9	25.1	2,113.4	14.8	14,240.9
1996	5,731.8	37.6	3,453.2	22.7	3,917.7	25.7	2,127.1	14.0	15,229.8
1997	6,530.4	40.1	3,553.1	21.8	4,187.7	25.7	2,017.0	12.4	16,288.2
1998	6,591.6	36.8	3,280.5	18.3	5,015.9	28.0	3,017.5	16.9	17,905.5
1999	7,429.7	38.1	3,248.2	16.7	5,502.8	28.2	3,320.0	17.0	19,500.7

Note: Including motor for-hire carriers of freight earning annual revenues of \$30 thousand or more.

Source: Transport Canada based on Statistics Canada, Annual Motor Carriers of Freight Survey (AMCF) 1990–99; Annual Supplement (Q5) to the Quarterly Motor Carriers of Freight Survey (QMCF) 1994–99; 1999 small carriers' revenues estimated by Transport Canada

### INTERMODAL TRANSPORT SYSTEMS

Intermodal transport is growing, and new forms of intermodal technology may assist this growth. The RoadRailer system (where modified highway trailers are placed on rail and pulled as trains) has been in operation for a number of years, and it has now been joined on a trial basis by the Iron Highway and the Canadian-developed system used by Ecorail.

The Iron Highway is a form of piggyback that provides a module containing two power units and a continuous deck of 1,200 feet (366 m) that can accommodate up to 20 53-foot-long (16 m) trailers. Several modules can be connected to form a conventional-length train. This system is designed to attract piggyback traffic from for-hire and private truckers and is best suited for medium-length hauls between urban areas.

Like RoadRailer, the Ecorail operation is based on carless operation; that is, the highway trailer or container chassis is used as the rail car. For movement by rail, bogies are placed under each end of the trailer. This technology is designed to be transferable anywhere the tracks are level with a road surface; it does not require specialized unloading facilities or equipment. It is hoped that this system will prove useful for remote locations.

accounted for 95 per cent of total volume and 84 per cent of total revenue.

Canada also receives a significant amount of courier shipments from the United States and other countries around the world. In the year 2000, the size of the Canada inbound courier market is estimated at US\$1.3 billion and 58.1 million packages carried (with the United States accounting for over 80 per cent of this total).

A number of key trends are affecting the courier industry in 2000, including growth due to the Internet; a growing number of competitors seeking Internet direct based "direct ship" business; continued adoption of technology to reduce costs and increase customer service; more stable pricing; continued mergers and acquisitions; and increasing challenges in attracting and retaining staff.

Table 11-4 shows Canadian courier companies' activities, in terms of revenues and volume in the last three years.

**TABLE 11-4: CANADIAN COURIER COMPANIES, ESTIMATED VOLUME AND REVENUES, 1998-2000**

Year	Daily Volume (Thousands of packages) <sup>1</sup>	Annual revenues (\$ million)	Average revenue per package
1998	1,906	3,995	8.32
1999	2,001	4,311	8.55
2000	2,091	4,658	8.88

1 Including "Same day" and "Next day" shipment services, based on business days (252 days in 1998 and 1999, 251 days in 2000).

Source: Canadian Courier Market Size, Structure and Fleet Analysis Study, Infobase Marketing Inc., January 2001

### OWNER-OPERATORS

Owner-operators are another important component of the trucking industry. They work under contract for either for-hire or private carriers, typically using their own tractor. In 1998, there were over 41,000 owner-operators in Canada; just over half were under contract to Ontario and Quebec-based carriers and a further one-third were concentrated in Alberta and British Columbia. Just under 80 per cent of the owner-operators are under contract to for-hire carriers.

Table 11-5 presents the number of owner-operators under contract by carrier type, as well as their revenues by province for 1998.

**TABLE 11-5: NUMBER OF OWNER-OPERATORS BY TYPE OF CARRIERS, 1998**

Province of domicile	Number of Owner-Operators working for:				Operating Revenues (\$ millions)
	For-hire Carriers	Private Carriers	Both	Total	
Newfoundland	339	112	28	479	65.4
Prince Edward Island	94	49	9	152	33.5
Nova Scotia	698	213	114	1,025	154.0
New Brunswick	1,223	342	92	1,657	269.4
Quebec	4,173	1,651	408	6,232	978.0
Ontario	10,535	3,300	1,064	14,899	2,035.5
Manitoba	1,896	314	150	2,360	333.8
Saskatchewan	1,456	473	139	2,068	320.9
Alberta	4,109	1,547	656	6,312	1,032.1
British Columbia	3,588	1,347	866	5,801	827.2
Yukon	21	22	8	51	8.3
Northwest Territories	17		4	21	3.0
<b>Total Canada</b>	<b>28,149</b>	<b>9,370</b>	<b>3,538</b>	<b>41,057</b>	<b>6,061.1</b>

Source: Statistics Canada, Surface and Marine Transport Bulletin, Cat. 50-002

### BANKRUPTCIES

The number of bankruptcies in the trucking industry generally follows a pattern similar to that for the whole economy, although there are some periods with some differences. As shown in Table 11-6, trucking bankruptcies dropped rapidly between 1991 and 1994, stabilized in 1995, then increased in 1996 and 1997. Following a decline in 1998, there was another increase in the level of bankruptcies in the trucking industry in 1999 followed by another increase in 2000.

Bankruptcies or other exits from the trucking industry do not have a significant impact on the provision of freight services. The majority of truck bankruptcies involve small one- or two-truck operators and also include companies involved with activities ancillary to trucking services.

Figure 11-4 shows the number of bankruptcies in the trucking industry versus those in the total economy between 1990 and 2000.



## CANADIAN COURIER INDUSTRY MARKET SIZE, STRUCTURE AND FLEET ANALYSIS STUDY

A 2000 study sponsored by the Motor Carrier Policy Branch of Transport Canada, the Canadian Courier Industry Market Size, Structure And Fleet Analysis Study, provides detailed information about how the size and structure of the Canadian courier market has changed over the past two years and what key factors affect growth and major market trends. It also provides a comprehensive snapshot of the fleets used by Canadian courier companies.

Using a combination of primary and secondary data gathering methodologies, the report concluded that an estimated 527.0 million packages (that weigh less than 150 lbs. each) generating annual revenues of \$4.7 billion were delivered by Canadian couriers in the year 2000.

Total industry compound annual growth between 1998 and 2000 is estimated at 4.7 per cent for volume and 8.0 per cent for revenue. The strong performance of the Canadian economy on both an export and domestic basis is the primary reason for this robust growth.

The courier industry may be broken down into two major segments;

- *Overnight or Later Delivery shipments* delivered at least one day after the day they are picked up. This segment of the market includes shipments delivered within Canada, to the United States or to other countries around the world.
- *Sameday Messenger shipments* delivered the same day they are picked up. By definition, these tend to be primarily local and/or regional deliveries.

The overnight or later segment of the market accounts for the majority of total courier industry activity (79 per cent of volume and 85 per cent of revenue). Other key facts regarding the size and structure of the industry include the following:

- *Domestic shipments*, or those that are picked up and delivered within Canada, represent 95 per cent of volume and 84 per cent of revenue.
- *Express shipments*, or those that are delivered either the same day they are picked up, or overnight by noon, are fully tracked and feature a delivery guarantee. They represent 25 per cent of volume and 55 per cent of revenue.
- *Boxes* (as opposed to letters) represent 76 per cent of volume and 80 per cent of revenue.
- *Provincial share of market* closely approximates the distribution of Gross Domestic Product, with Ontario accounting for 46 per cent of all industry activity, followed by Quebec at 21 per cent and British Columbia at 14 per cent.
- Although there are an estimated 2,400 courier companies operating in Canada, the market is heavily concentrated among a number of "tier 1" competitors (defined as companies with annual revenues in excess of \$25 million). Tier 1 competitors hold 68 per cent share in terms of industry volume and 63 per cent of revenue.

Canada also receives a significant amount of courier shipments from the United States and other countries around the world. In the year 2000, the size of the Canada inbound courier market is estimated at US\$1.3 billion and 58.1 million packages (with the United States accounting for over 80 per cent of this total).

In the year 2000, a total of 24,700 vehicles are estimated to be involved in the pickup and delivery of courier shipments in Canada. Step vans make up the majority (52 per cent) of the Canadian courier industry fleet, followed by cargo vans (20 per cent). Other key aspects of the Canadian courier industry vehicle fleet include the following:

- Over half (or almost 53 per cent) are company-owned (the rest are either independently owned or leased).
- On average, each vehicle travels 51,239 kms/year.
- Gasoline accounts for the majority (58 per cent) of fuel purchases, followed by diesel at 37 per cent.
- Approximately 64 per cent of vehicles utilize some type of on-board vehicle technology. Cellular Data and Radios are the most common (present in 45 per cent and 23 per cent of vehicles respectively).
- The overall average vehicle age is 4.9 years.
- The average capacity utilization, or percentage of total allowable weight that can legally be carried, is 68.7 per cent.
- The large majority of miles travelled are within Canada (over 95 per cent).
- Fuel accounts for over 50 per cent of total fleet operating costs (excluding driver wages and benefits).

Between 2000 and 2003, the total Canada origin (excluding inbound) courier market is forecast to grow to \$5.8 billion in annual revenues and 604.8 million packages. In percentage terms, this equates to a compound annual growth rate of 7.5 per cent for revenue and 4.3 per cent for volume.

One key driver of industry growth will be overall economic performance (which although not as robust as the past two years, is expected to continue nonetheless). The Internet and e-commerce are also expected to play major roles in future industry growth.

The effect of the Internet on the courier industry in Canada may be viewed from four primary perspectives:

- *Functionality*: Courier companies of all types and sizes have leveraged the capabilities of the Internet to improve existing business processes, customer service, etc. (e.g. online pickup scheduling, tracking, etc.)
- *New Services*: Many courier companies have introduced new services beyond the physical movement of goods as a result of the Internet (e.g. secure document delivery, etc.)
- *Competitive*: The Internet has facilitated the entrance of many Web-based competitors (e.g. nowdocs.com, etc.) and increased interest levels in small package shipping services among larger shipment configuration service providers such as LTL and trucking firms.
- *Industry Volume*: The Internet has and will continue to substantially affect industry shipping volumes, shipment characteristics, etc. For example, the growing use of e-mail, and recent decisions by many governments to accept electronically signed documents as legally binding, will reduce the need to send letters and documentation. Offsetting this however, is the increased number of "package" shipments that will be sent as a result of the growth in the "direct shipping" supply chain model e-commerce is largely based upon.

When looking at the effect of the Internet/e-commerce in terms of actual industry volume, the following conclusions have been drawn:

- Just over 12 per cent of all courier industry revenue in 2000 is generated from the fulfillment (delivery) component of Internet-based purchases (\$57.1 million)
- 75 per cent of courier industry revenues associated with delivering Internet-based purchases of goods are derived from businesses
- Based on the predictions of several Internet-based think tanks, just over 50 per cent of total courier industry revenues will be derived from the Web in 2003 (as compared with 12 per cent estimated for 2000).

In addition to the Internet/e-commerce, a number of other industry trends will also continue to affect the Canadian courier industry including increasing competition from postal administrations; continued adoption of technology to reduce costs and increase customer service; a shift toward information as a service offering; continued mergers and acquisitions; and increasing challenges in attracting and retaining quality staff.

As this report indicates, the Canadian courier industry is a substantial, vibrant and growing component of the supply chain management strategies of many companies and contributes significantly to the success and well-being of the overall Canadian economy.

Source: Courier Industry Size, Structure And Fleet Analysis Study, Infobase Marketing Inc., January 2001.



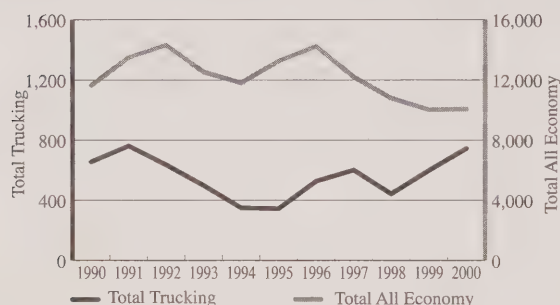
**TABLE 11-6: ANNUAL TRUCKING BANKRUPTCIES BY REGION, 1990 – 2000**

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia and Territories	Total Trucking	Total Economy
1990	57	142	147	213	97	656	11,642
1991	98	107	191	223	143	762	13,496
1992	70	119	188	171	88	636	14,317
1993	70	91	152	130	56	499	12,527
1994	37	67	88	125	33	350	11,810
1995	31	81	58	141	34	345	13,258
1996	74	90	107	197	59	527	14,229
1997	82	119	164	178	58	601	12,200
1998	39	71	121	158	54	443	10,791
1999	46	104	143	249	56	598	10,026
2000	61	133	203	303	44	744	10,055

Note: Truck Transport industries include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy

**FIGURE 11-4: NUMBER OF BANKRUPTCIES, TRUCKING VERSUS TOTAL ECONOMY, 1990 – 2000**



Note: "Truck Transport Industries" include general freight, used goods moving and storage, bulk liquids, dry bulk materials, forest products and other truck transport industries.

Source: Industry Canada, Office of the Superintendent of Bankruptcy

## BUS INDUSTRY

Because of the overlap among the various market segments, it is easier to present information on the bus industry in terms of the service lines provided, especially as all industry sectors report revenues in the same service line categories.

Canada's bus industry is made up of six main lines of business, the three main ones being intercity bus services, urban transit services and school bus services. Intercity bus passenger services are further divided into scheduled and charter services. Tour services are mainly sightseeing services over fixed routes and sell individual seats, while charter carriers rent the entire vehicle to a group. Shuttle carriers are primarily involved in providing service to airports and rail terminals.

With one significant exception, the Canadian scheduled bus industry is essentially oriented toward regional service. The exception to this regional orientation is the

national network operated by the Laidlaw companies (Greyhound, Grey Goose, Voyageur Colonial, and several others), which provide international service, national service from Montreal and Southern Ontario to the Pacific Coast, and significant local/regional service in Ontario, Manitoba, Alberta and British Columbia.

Direct competition between bus carriers is currently limited to the Edmonton–Calgary–Fort McMurray corridor (Greyhound and Red Arrow) and routes in Southern Ontario, particularly around Toronto and on the Toronto–Niagara corridor (Greyhound, Trentway, PMCL, Ontario Northland).

Carriers in all sectors and of all sizes offer a mix of services. The largest Canadian carrier, Laidlaw Inc. of Burlington, Ontario, is primarily a school bus operator. Through its ownership of Greyhound, however, Laidlaw is also the largest scheduled carrier in both Canada and the United States. At the other end of the scale, most small school bus operators also provide some charter service. Among the charter carriers, Trentway-Wagar (Coach USA) is also a major scheduled operator in Ontario and Quebec. Virtually all scheduled carriers provide at least some charter service. These overlaps among the industry sectors make it difficult to describe the size of the scheduled and charter industry.

Table 11-7 summarizes revenues by source of revenue for the same year.

**TABLE 11-7: SUMMARY OF REVENUES BY SOURCES OF REVENUE, 1999**

	Intercity bus operators	Charter <sup>1</sup> bus operators	School bus operators	Urban transit operators	Total
<b>Number of establishments<sup>2</sup></b>	<b>28</b>	<b>162</b>	<b>806</b>	<b>66</b>	<b>1,062</b>
<b>Sources of revenues</b>	(Millions of dollars)				
Scheduled intercity services	65.9	26.9	143.1	0.0	235.8
Charters, sightseeing and shuttle services	9.7	205.8	132.7	4.2	352.4
School bus transportation	2.4	18.7	893.8	0.4	915.3
Urban transit services	2.2	16.8	36.8	1,761.3	1,817.0
Other passenger/operating revenue	9.4	63.1	57.2	88.8	218.5
Parcels express	16.6	2.3	69.3	0.0	88.2
<b>Total (excluding subsidies)</b>	<b>106.2</b>	<b>333.5</b>	<b>1,332.8</b>	<b>1,854.7</b>	<b>3,627.2</b>
Subsidies <sup>3</sup>	0.3	0.1	2.1	2,559.8	2,562.2
<b>Total</b>	<b>106.5</b>	<b>333.6</b>	<b>1,334.9</b>	<b>4,414.5</b>	<b>6,189.5</b>

<sup>1</sup> Consists of charter, shuttle and sightseeing operators.

<sup>2</sup> Includes bus operators with annual revenues greater than \$200,000.

<sup>3</sup> Includes operating and capital subsidies for urban transit operators.

Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

## MAJOR BUS EVENTS IN 2000

### LEGISLATIVE AND REGULATORY CHANGES

#### *Motor Vehicle Transport Act, 1987 Review*

In March 1999, the federal Minister of Transport introduced amendments to the *Motor Vehicle Transport Act* (Bill C-77), which, among other things, proposed phasing in economic deregulation of the bus industry over a two-year period.

Following the tabling of Bill C-77, it became apparent that even a transitional approach to bus deregulation was not acceptable to some provinces and segments of the industry. On March 2, 2000, the Minister tabled revised amendments (Bill C-28). Following the November 2000 federal election, the proposed amendments were re-introduced in Parliament, in the Senate (Bill S-3), on January 31, 2001.

#### Industry Events – 2000

In 2000, FirstGroup PLC (London, United Kingdom) acquired the Hertz Group of Companies, headquartered in Regina. The 13 companies that make up the Hertz Group are primarily involved in school bus sales and service in Saskatchewan and the Northwest Territories.

Throughout 2000, Laidlaw's financial position attracted considerable interest. Although Laidlaw reported that its bus operations in Canada and the United States remained profitable, the company reported significant losses in both 1999 and 2000. Laidlaw remains in the process of corporate restructuring.

## SERVICE LINES

As shown in Table 11-7, total revenues for the bus industry in 1999 amounted to \$6.2 billion. Subsidies represented 41 per cent of the total or \$2.6 billion. Excluding subsidies, main sources of bus revenue are urban transit operations totalling \$1.8 billion or 50 per cent of total industry revenues, followed by school bus activities with 25 per cent of total revenues, charters, sightseeing and shuttle services (9.7 per cent), and scheduled intercity services (6.5 per cent).

The service line revenue breakdown shows better than any other indicator the cross-sectoral relationships in the industry. The school bus sector, for example, is not only far bigger than any of the others, but also the largest single provider of scheduled service, with \$143 million in revenue.<sup>6</sup> Overall, the service line approach gives the best indication of the relative growth or decline of scheduled and charter services.

As Table 11-8 shows, the Canadian bus industry experienced a 13 per cent overall increase in revenues (excluding subsidies) between 1995 and 1999. Within different sectors, revenue reporting is subject to variations. These have been caused, in large part, by consolidated financial reporting resulting from mergers and acquisitions, as well as the new classification system used by Statistics Canada, i.e. the North American Industry Classification System (NAICS).<sup>7</sup>

TABLE 11-8: TOTAL REVENUES BY INDUSTRY SECTOR AND TYPE OF SERVICES, 1995 – 1999

	(Millions of dollars)					Per cent change 1995 – 1999
Type of Operators	1995	1996	1997	1998	1999	
Scheduled intercity operators <sup>1</sup>	330.9	314.3	301.2	128.9	106.2	(67.9)
Charter, Sightseeing and shuttle	275.7	301.4	289.5	339.8	333.5	21.0
School bus operators	1,054.9	1,032.2	1,023.0	1,286.6	1,332.8	26.3
Urban Transit operators	1,545.3	1,621.4	1,712.3	1,743.8	1,854.7	20.0
<b>Total (Excluding subsidies)</b>	<b>3,206.8</b>	<b>3,269.3</b>	<b>3,326.0</b>	<b>3,499.1</b>	<b>3,627.2</b>	<b>13.1</b>
Subsidies	2,036.0	2,056.2	2,137.1	2,386.2	2,562.2	25.8
<b>Total Revenues</b>	<b>5,242.8</b>	<b>5,325.5</b>	<b>5,463.1</b>	<b>5,885.3</b>	<b>6,189.5</b>	<b>18.1</b>
<b>Type of Services</b>						
Scheduled Intercity services	245.8	247.9	241.3	240.1	235.8	(4.0)
Charters, sightseeing and shuttle services	317.9	334.2	316.4	368.7	352.4	10.8
School bus services	864.5	832.2	825.7	893.5	915.3	5.9
Urban Transit services	1,483.8	1,574.1	1,672.2	1,694.0	1,817.0	22.5
Other passenger/operating revenues	216.2	196.3	191.2	216.2	218.5	1.1
Parcels Express delivery	78.6	84.6	79.4	86.6	88.2	12.2
<b>Total (Excluding subsidies)</b>	<b>3,206.8</b>	<b>3,269.3</b>	<b>3,326.0</b>	<b>3,499.1</b>	<b>3,627.2</b>	<b>13.1</b>
Subsidies	2,036.0	2,056.2	2,137.1	2,386.2	2,562.2	25.8
<b>Total Revenues</b>	<b>5,242.8</b>	<b>5,325.5</b>	<b>5,463.1</b>	<b>5,885.3</b>	<b>6,189.5</b>	<b>18.1</b>

1 Starting in 1998, some scheduled intercity carriers have been recorded under school bus operators due to consolidated financial reporting coming from mergers and acquisitions

Source: Statistics Canada, *Passenger Bus and Urban Transit Statistics*, Cat. 53-215: Special tabulations

6 In 1998-99, the high proportion of scheduled intercity revenues recorded under school bus operators is due to consolidated financial reporting coming from mergers and acquisitions, as some intercity carriers activities have been reported under carriers involved primarily in school bus operations.

7 Following the 1995 North American Free Trade Agreement, Canada, the USA and Mexico developed the North American Industry Classification System (NAICS) to replace the Standard Industrial Classification (SIC) system. The bus industries covered under NAICS include urban transit systems; interurban and rural bus transportation; school bus transportation; charter bus industry; shuttle services; and scenic and sightseeing transportation by bus.

## MARINE TRANSPORTATION INDUSTRY

A fleet of Canadian flag operators providing domestic and transborder shipping services make up Canada's marine industry, while foreign flag operators calling at Canada's major ports largely serve international trade. Recent years have seen major policy reforms in the marine sector, and the year 2000 was no exception. A number of important events took place and progress on some significant legislative changes occurred.

### MAJOR MARINE EVENTS IN 2000<sup>8</sup>

#### LEGISLATIVE AND REGULATORY CHANGES AND INITIATIVES

##### *Marine Liability Act (MLA)*

The introduction of the *Marine Liability Act* (MLA) is an important step toward modernizing marine liability legislation in Canada. The principal objective of the Act is to introduce, for the first time, legislation aimed at establishing liability for passengers in the marine mode. At the same time, the legislation introduces new rules for apportioning liability in maritime cases and consolidates all existing marine liability regimes into the Act.

The Senate passed the MLA, introduced as Bill S-17, on May 17, 2000. It moved successfully through the House of Commons, receiving second reading on October 6, 2000, and referral to the Standing Committee on Transport shortly before Parliament was dissolved. The proposed MLA was re-introduced and passed by the Senate on January 31, 2001, as Bill S-2. It was referred to the House of Commons where it received its Second Reading on February 23, 2001. The Bill was referred to the Standing Committee on Transport and Government Operations (SCOTGO).

##### *Amendments to the Shipping Conferences Exemption Act, 1987 (SCEA)*

Following a review of the *Shipping Conferences Exemption Act* (SCEA), begun by Transport Canada in 1999, and including extensive consultations, Bill C-14 was introduced in Parliament on March 1, 2001. The Bill contains amendments to SCEA that relate to shipping and navigation. Transport Canada remains committed to ensuring that its shipping conference legislation is kept in balance with that of Canada's major trading partners, in particular the United States. The amendments promote a

competitive operating environment in conferences and also support Canada's international trade. The Act attempts to ensure that Canadian shippers have access to a reliable level of service from international ocean shipping lines at reasonable cost.

##### *Canada Shipping Act, 2001 (Bill C-14)*

The *Canada Shipping Act* (CSA) is the principal legislation governing the operation of Canadian vessels, as well as the operation of foreign vessels in waters under Canada's jurisdiction. It is one of the oldest pieces of legislation still in effect in Canada. A complete rewrite of the CSA was undertaken and was introduced in the House of Commons on June 8, 2000, as the *Canada Shipping Act, 2000* (Bill C-35). This legislation modernizes all aspects of the current CSA. The legislation introduces a new enforcement scheme that seeks to encourage and promote compliance by means of administrative penalties, thus, reserving the court system for only the most serious offences.

Bill C-35 died on the order paper when Parliament was dissolved. It was re-introduced in the House of Commons on March 1, 2001, as the *Canada Shipping Act, 2001* (Bill C-14), which received second reading on March 16, 2001, and was then referred to the Standing Committee on Transport and Government Operations (SCOTGO).

#### TRANSPORTATION AND INTERNATIONAL INITIATIVES

##### **Organisation for Economic Co-operation and Development (OECD) — Maritime Transport Committee**

Through the Maritime Transport Committee, the Organisation for Economic Co-operation and Development (OECD) continued work on various maritime issues. Of particular interest was a workshop on Regulatory Reform in International Maritime Transport that focused on liner shipping conferences and questions concerning the application of antitrust laws.

More than 100 participants representing maritime and competition administrators, shipowners, shippers and freight forwarders attended. They openly expressed their views on such issues as removal of immunity from antitrust laws, setting common conference tariffs, discussion and capacity agreements, and recent reviews of domestic conference legislation in OECD countries.

Shippers strongly endorsed lifting antitrust immunity for conferences, while shipowners and a number of OECD countries argued that the current system is working well

<sup>8</sup> Some initiatives started in 2000, or before, that entered formally the legislative process in 2001 are also presented in this sub-section.



### SHIPPING CONFERENCES EXEMPTION ACT, 1987 (SCEA)

A shipping conference is an association of liner companies operating under an agreement to provide service on common routes based upon agreed rates and terms of service. The *Shipping Conferences Exemption Act, 1987* (SCEA) exempts certain shipping conference practices from the provisions of the *Competition Act*. Under SCEA, for example, shipping conferences can set ocean freight rates and services together, provided they publish their rates in a tariff filed with the Canadian Transportation Agency (CTA) and file their conference agreement in a similar manner. Canada's major trading partners also maintain similar exemptions from competition legislation for shipping conferences.

The Act also incorporates provisions for confidential "service contracts" that may be subject to conference rules and "independent action" by individual conference members. These provisions are in place to promote intra-conference competition and provide shippers with additional options, including pricing options.

In addition, the Act provides for the Minister of Transport to designate a shippers' group to represent shippers' interests. The Canadian Shippers' Council (CSC) is one example. Under the Act, conferences are required to meet with the designated shippers' group when requested and provide information to conduct the meeting satisfactorily. Customarily, the Canadian Shippers' Council meets with tariff filing conferences to discuss the conferences' proposed business plans, as well as their rates, surcharges and ancillary charges.

and is necessary to ensure the availability of services to shippers.

The workshop resulted in the recommendation that the Maritime Transport Committee continue to investigate antitrust immunity, common pricing behaviour, and the impact of various types of operating agreements between carriers.

## INDUSTRY EVENTS

### International

- Concentration is increasing in international liner shipping. The top 20 companies now control 76 per cent of the world's cellular fleet, up from just over 50 per cent in 1995.
- The financial recovery enjoyed by the liner shipping industry during 1999 continued through 2000.
- Two established shipping lines added direct calls at Halifax to their transatlantic services during 2000 — Costa Container Line and Mediterranean Shipping Company.
- Vancouver also has new services calling: China Shipping Container Line introduced a service to the Far

East in July 2000 and Compania Sud Americana De Vapores (CSAV) started a new service operating from the Far East to Vancouver and then outbound to Central and South America.

- Two independent operators — Norasia Lines and BOLT Canada Line — withdrew their services to Montreal early in 2000.
- CP Ships continued on its expansion path, acquiring TMM Lines shareholding in Americana Ships in January 2000 and then Christensen Canadian African Line in April 2000.
- CP Ships is also undertaking a major fleet retonnaging program, including both new building orders and the acquisition of used vessels. CPR Ships currently ranks as the 11th largest container operator in the world, based on its fleet capacity, according to *Containerization International*.
- Kent Line (Irving Group) has entered into a vessel sharing agreement with Seaboard Marine for a service that will call in Miami and the Caribbean.
- Matson Navigation announced that it was dropping its West Coast marine feeder service, connecting the Pacific Northwest and California, in favour of intermodal rail service late in 2000.

### Domestic

- Algoma Central Corporation and Upper Lakes Group Inc. announced the pooling of their straight deck bulker and self-unloader fleets into a single new entity, Seaway Marine Transport, early in 2000.
- CSL Group purchased the 50 per cent stake in Marbulk Canada Inc. belonging to Upper Lakes Group to become partners with Algoma Central Corporation.
- Rotterdam-based Smit International acquired Rivtow Marine Ltd., the second-ranked tugboat company in British Columbia.
- The year 2000 marks the last year that the Canadian Coast Guard will administer the Eastern Arctic Sealift, a responsibility to be assumed in future years by the Government of Nunavut.

## MARINE FREIGHT TRANSPORT SERVICES

### DOMESTIC SERVICES

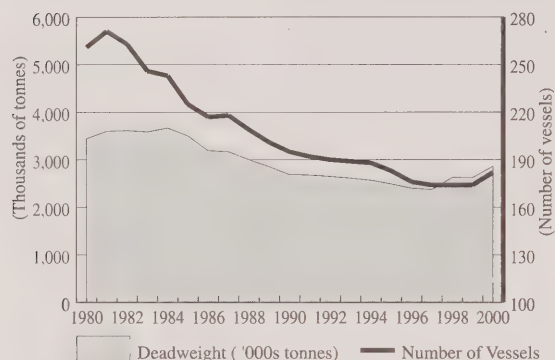
From 1980 to 1997, the Canadian merchant fleet, defined here as self-propelled Canadian-flagged vessels of 1,000 gross tonnes and over, lost on average one per cent of its carrying capacity each year, declining from 3.4 million to 2.3 million deadweight tonnes. Carrying



capacity (deadweight) started a recovery process in 1998 to reaching nearly 2.9 million tonnes by the end of 2000.

The number of ships followed a similar trend, falling from 261 to 174 vessels over the 1980–1997 period, before rising to 182 ships in 2000. Figure 11-5 illustrates the evolution of the Canadian registered fleet from 1980 to 2000.

**FIGURE 11-5: CANADIAN REGISTERED FLEET, 1980 – 2000**  
(Ships of 1,000 gross tons and over)



Notes: Deadweight tonnage of vessel carrying capacity in metric tonnes.  
Fleet includes self-propelled vessels of 1,000 gross tons and over.

Source: Canadian Transportation Agency and Transport Canada

From 1980 to 2000, dry bulk carriers remained the backbone of the Canadian merchant fleet, although this segment's share of total deadweight tonnage dropped from 81 to 69 per cent over the period. The total fleet of dry bulk carriers fell from 129 to 72 vessels, on the other hand, tankers' share rose from 10 to 21 per cent of total deadweight tonnage, although their number declined from 39 to 22 vessels.

Table 11-9 shows the transport capacity of the Canadian registered fleet, by type of vessel.

**TABLE 11-9: CANADIAN REGISTERED FLEET BY TYPE, 1980 – 2000**

Type of Carriers	Deadweight ('000s tonnes)			Number of Vessels		
	1980	1990	2000	1980	1990	2000
Dry Bulk	2,789	2,099	1,966	129	80	72
Tankers	360	384	613	39	34	22
General cargo	151	99	183	28	17	24
Ferries	72	68	66	54	54	56
Other	73	39	35	11	10	8
<b>Total</b>	<b>3,444</b>	<b>2,687</b>	<b>2,864</b>	<b>261</b>	<b>195</b>	<b>182</b>

Note: Fleet includes self-propelled vessels of 1,000 gross tonnes and over.

Source: Canadian Transportation Agency and Transport Canada

## Eastern Canada

In January 2000, Algoma Central Corporation and Upper Lakes Group Inc. announced the merger of their pooled fleets, Seaway Self Unloaders and Seaway Bulk Carriers into a new entity, Seaway Marine Transport. Algoma Central and Upper Lakes will continue to independently own and operate the 43 vessels dedicated to the pool.

The merger of Algoma and Upper Lakes Group's entire dry bulk fleets continues a pattern of fleet consolidation that started in 1990 with the pooling of the firms' bulk fleets into Seaway Bulk Carriers. The driving force then came from the dwindling of the eastbound movement of export grain — the primary cargo for Great Lakes bulkers — thus pressuring the Canadian bulk fleets to reduce costs wherever possible. In 1991, Canada Steamship Lines, Misener Holdings Ltd. and James Richardson & Sons Ltd. followed suit and pooled their 16 bulkers to create Great Lakes Bulk Carriers (GLBC). In 1994, Algoma and Upper Lakes Group swallowed up GLBC and also extended their partnership to the self-unloader side by forming Seaway Self Unloaders. The two partners hope to achieve further increases in efficiency by integrating both bulkers and self-unloaders.

On the international side of their operations, the companies also participate in pooling arrangements. In January 2000, Canada Steamship Lines Inc. (CSL) purchased the 50 per cent stake in Marbulk Canada Inc. belonging to Upper Lakes Group, becoming partners with Algoma Central Corporation. Marbulk operates a fleet of eight self-unloading bulk carriers in international trades. The Marbulk commercial operation has since been integrated into CSL International Inc., a subsidiary of CSL, which also operates a fleet of self-unloading bulk carriers in international trades.

Table 11-10 provides information on vessel type, gross registered tonnage (GRT), area of operation, and type of service for companies operating Canadian-flag cargo vessels of 1,000 GRT and over in eastern Canada. Algoma Central Corporation, Upper Lakes Group, and Canada Steamship Lines are the three largest operators in the area. Algoma Central Corporation, with 28 per cent of eastern Canada's fleet capacity, is the largest inland shipping company in Canada.

## Western Canada

A large fleet of tugs and barges provides domestic marine cargo services on the West Coast. (Unfortunately, there is no fleet list available by company providing GRT for their tugs and barges.) Most of the operators concentrate on domestic trade, but some trade

TABLE 11-10: EAST COAST CANADIAN-FLAG CARGO FLEET — 1,000 GRT AND OVER, 2000

<i>Companies</i>	<i>Type</i>	<i>Number of vessels</i>	<i>GRT</i>	<i>Area of Operation</i>	<i>Type of Service</i>
Algoma Central Corp.	Bulker	9		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk, liquid bulk
	Self-Unloader	15		Great Lakes/St. Lawrence/East Coast Canada	
	Tanker	6		Great Lakes/Gulf of St. Lawrence/ East Coast Canada	Dry bulk
	Total	30	502,970		
Black Creek Shipping Co. (See Lower Lakes also)	Self-Unloader	1	10,532	Great Lakes/St. Lawrence	
Canada Steamship Lines	Bulker	1		Great Lakes/St. Lawrence/East Coast Canada	Dry bulk
	Self-Unloader	11		Great Lakes/St. Lawrence/East Coast Canada	
	Total	12	273,235		
Canarctic Shipping	Bulker	1	20,236	Canadian Arctic from May to November	Dry/Liquid bulk
Canship Ltd.	Other	1	1,714	East Coast	
C.A. Crosbie Shipping	Other	2	5,301	Canadian Arctic/East Coast Canada/Atlantic Basin	Container, breakbulk, Ro-Ro
ESSROC Canada	Other	1	6,792	Great Lakes	Cement
Groupe Desgagnés	Tanker	3		Great Lakes/St. Lawrence/ Arctic/Overseas	Container/breakbulk/ dry bulk/grain
	Other	6			
	Total	9	61,210		
Imperial Oil	Tanker	1	1,192	Great Lakes	Liquid bulk
Irving/Kent Line	Tanker	3	51,091	Maritimes	Liquid bulk
LaFarge Canada	Other	1	6,729	Great Lakes	Cement
Lower Lakes Towing	Self-Unloader	1	12,557	Great Lakes/St. Lawrence	Dry bulk
McKeil Work Boats Ltd.	Other	2	8,082		
Mobil Oil, Chevron, Murphy Oil Corp. Partnership	Tanker	1	76,216	Maritimes	Liquid bulk
Oceanex Inc.	Other	3	41,157	St. Lawrence/East Coast Canada	Container, trailer, Ro-Ro, breakbulk
Parrish & Heimbecker Ltd. (P & H Shipping)	Bulker	2	32,570	Great Lakes/St. Lawrence	Dry bulk, grain
N.M. Paterson & Sons	Bulker	7	113,814	Great Lakes/St. Lawrence	Dry bulk, grain
Penney Ugland Inc.	Tanker	1	76,216	Maritimes	Liquid bulk
Pierre Gagne Contracting	Self-Unloader	1	20,148	Great Lakes/St. Lawrence	Dry bulk
Provmar Fuels Inc.	Tanker	2	5,949		Liquid bulk
Purvis Marine	Other	1	3,280		
Rigel Shipping Canada Inc.	Tanker	3	18,786	St. Lawrence	Liquid bulk
Shell Canada	Tanker	1	2,758	St. Lawrence	Liquid bulk
Transport Nanuk	Other	3	23,463	Arctic ports/St. Lawrence/International	Heavy lift, Ro-Ro, general, Lo-Lo
Upper Lakes Group	Bulker	13		Great Lakes/St. Lawrence	Dry bulk, grain
	Self-Unloader	8			
	Total	21	390,556		
<b>Grand Total</b>		<b>111</b>	<b>1,766,554</b>		

Source: Lloyd's Register of Ships and Transport Canada data

internationally between Canadian and US ports. There is also a significant fleet of ferry vessels providing links to coastal and island communities.

Montana businessman Dennis Washington owns three of the top tug and barge companies — Seaspan International Ltd., Cates Tugs, and Kingcome Navigation Company (formerly owned by MacMillan Bloedel). Seaspan International Ltd. is the largest Canadian tug and barge operator on the West Coast. Seaspan's main

areas of business include tug and barge transportation, log barging and ship docking.

The second-ranked tugboat company in British Columbia, Rivtow Marine Ltd., was acquired during 2000 by a Canadian subsidiary of Rotterdam-based Smit International. The acquisition included Rivtow's wholly owned subsidiary Tiger Tugz Inc. and its interest in Westminster Tug Boats.

## Northern Canada

Headquartered in Hay River, Northern Transportation Company Limited (NTCL) is the principal marine operator in the area of Northern Canada that encompasses the Mackenzie River Watershed and the Arctic coast and islands. Its operations cover the Mackenzie River, the western Arctic, Alaska and Great Slave Lake. Operating on the Mackenzie River since 1934, NTCL handles bulk petroleum products and dry cargo for communities, defence installations and gas exploration sites across the North.

Northern Transportation Company Limited has also provided tug and barge operations since 1975 from the Port of Churchill to service communities in what is now the Kivalliq region of Nunavut. In 1987, the company established an eastern Arctic Sealift marshalling and packaging service out of Montreal, operated through its subsidiary, NorTran Inc. In 1996, NTCL expanded its eastern Arctic operations when the company secured a contract to resupply fuel to Baffin communities, using chartered ice-strengthened tankers.

*Lloyd's List of Shipowners, Managers, and Managing Agents, 1999-2000* records NTCL as the owner of 87 vessels, including 71 barges (mainly tank barges that carry dry cargo on their decks) and 16 tugs, with a total of 71,449 GRT (*Lloyd's* does not include vessels under 100 GRT). NTCL's tugs were constructed between 1943 and 1973, and its barges date from 1969 to 1975.

NTCL is a member of the NorTerra group of companies. NorTerra Inc. is a 100-per cent Aboriginally owned holding company. It is managed and owned equally by Inuvialuit Development Corporation, representing the Inuvialuit of the western Arctic, and Nunasi Corporation, representing the Inuit of Nunavut.

A. Frame Contracting Ltd. and Cooper Barging Service Ltd. are other long-term operators in the western Arctic. A. Frame Contracting operates a tug and several barges, providing seasonal barge services to communities on Lake Athabasca. Cooper Barging Service operates a fleet of three tugs and six barges, providing resupply services on the Mackenzie and Liard Rivers from its base at Fort Simpson.

For over 40 years, the Canadian Coast Guard has been co-ordinating the movement of goods in the eastern Arctic. The Coast Guard Arctic Sealift divides the eastern Arctic communities into five zones, combining smaller communities with larger centres in the same zone. This allows all communities to share in a lower average shipping rate through economies of scale, with the same rate applying regardless of the size of the shipment.

Operated on a cost-recovery basis, the service co-ordinates the delivery of cargoes for federal departments, the territorial government, the United States Air Force, municipalities, and private businesses and citizens. Coast Guard personnel lease space on ships, act as booking agents, negotiate the lowest freight rates with the carriers, and monitor the movement of the cargo until it is discharged at its destination. Working under contract with the Coast Guard, commercial cargo vessels and tankers transport dry cargo from its main marshalling base in Montreal and bulk fuel from northern distribution points to communities in the eastern Arctic (Nunavut) during the ice-free summer period. The Sealift Program serves 26 communities in the areas of Foxe Basin, the High Arctic, and the South and East Baffin. In 1999, a total of 11,045 tonnes of cargo were delivered to all of the communities.

The year 2000 was the last year that the Canadian Coast Guard administered the Arctic Sealift. In September 2000, the Minister of Fisheries and Oceans announced that the Government of Canada is transferring responsibility for the Arctic Sealift operations to the Government of Nunavut, effective at the end of the 2000 shipping season.

In addition to the Arctic Sealift to the Baffin Region of Nunavut and the Northern Transportation Company Limited service to the Kivalliq Region out of Churchill, the Quebec Ministry of Transportation manages resupply services to the Nunavik Region, while Moosenee Transport Ltd. handles cargo originating in Toronto and bound for the James and Hudson Bay Cree out of Moosenee.

Carriers active in the eastern Arctic resupply include Northern Transportation Company Limited, Transport Desgagnés, C.A. Crosbie Shipping Ltd., Transport Nanuk Inc., McKeil Work Boats Ltd., and Moosenee Transport Ltd., a tug and barge operator servicing James Bay and the lower part of Hudson Bay.

In addition to community resupply, mines such as Polarix and Nanisivik have vessels calling with supplies inbound and carrying zinc and lead concentrates to world markets outbound. Fednav, the owner of the *MV Arctic*, is active in this market.



## INTERNATIONAL SERVICES

International marine freight transport consists mainly of liner and bulk shipping.

### Bulk Shipping

In general, bulk shipping refers to the sector of the marine freight industry that carries single cargoes in large volume ships. Canadian shippers of bulk commodities — including grain, coal, iron ore and potash — rely on bulk shipping operators to move their cargo.

The open global market sets bulk freight rates. In general, the market is highly competitive and made up of time charters (term contracts) and the “spot” market. The terms of charter contracts typically range from one to five years, depending on the volatility of prices. During periods of greater predictability in transportation rates, longer contracts are common, while shorter contracts usually prevail when prices are unstable. These types of marine service arrangements move the majority of Canada’s exports and imports.

Short-term contracts covering a specific number of voyages, days or given quantity of cargo make up the “spot” or “tramp” market, with prices set in open markets and exchanges. Prices depend on supply and demand factors such as vessel size, equipment, trade route and timeliness of the service requirement.

### Liner Shipping

In general, liner carriers handle higher-value containerized cargoes, such as electronics, manufactured goods or frozen produce. Liner services are offered according to published schedules and on specific trade routes with fixed itineraries.

Controlled to a large degree by Pacific Rim and western European interests, the international liner trade is dominated by large fleets of specialized container vessels operating on major trade routes around the world. Canadian Pacific subsidiary CP Ships controls a significant fleet that ranks 11th in the world, based on vessel capacity and number of ships.<sup>9</sup> Much of CP Ships’ fleet has been amassed through the acquisition of foreign shipping lines over the past few years. The vast majority of vessels in the Canadian-controlled international fleet operate under foreign flags and employ foreign officers and crew.

Shipping lines calling at Canadian ports may choose to provide conference or non-conference liner services. Ocean carriers providing liner services on a common trade route often elect to form a shipping conference and

collectively agree on rates and/or conditions of service. Under the *Shipping Conferences Exemption Act (SCEA)*, a group of lines are entitled to operate under a conference agreement that exempts certain practices of the conferences from the provisions of the *Competition Act*. The Canadian Transportation Agency is responsible for administering the SCEA.

“Independent” shipping lines or non-conference carriers are those that choose not to participate in conferences. They generally offer rates and services that are comparable with conference operators and contribute to a competitive international shipping industry. In recent years, the tonnage carried by non-conference carriers has been increasing compared with the tonnage carried by conference operators visiting Canadian ports.

### Services Available to Canadian Shippers

In 2000, the Canadian Transportation Agency had 15 shipping conference agreements on file. Thirteen of these conferences filed tariffs with the Agency, the same number as in 1999. Most operate from eastern Canada to northern Europe and the Mediterranean. Among the major lines serving Canada as conference members are Atlantic Container Line, Canada Maritime Ltd., Hapag-Lloyd Container Line, P&O Nedlloyd, Mitsui O.S.K. Lines and Orient Overseas Container Line.

Table 11-11 lists the 12 tariff-filing conferences serving Canada in 2000. Eleven serve the East Coast, and seven serve the West Coast. The Japan-East Canada Freight Conference and the Japan-West Canada Freight Conference, which appeared on the list for 1999, have now been dissolved, further reducing the number of active conferences.

**TABLE 11-11: SHIPPING CONFERENCES SERVING CANADA IN 2000**

Australia/Canada Container Line Association (E & W)
Canada/Australia – New Zealand Association of Carriers (E & W)
Canada/Australia–New Zealand Discussion Agreement (E & W)
Canada Transpacific Stabilization Agreement (E & W)
Canada–United Kingdom Freight Conference (E)
Canada Westbound Transpacific Stabilization Agreement (E & W)
Canadian Continental Eastbound Freight Conference (E)
Canadian North Atlantic Westbound Freight Conference (E)
Continental Canadian Westbound Freight Conference (E)
Mediterranean Canadian Freight Conference (E)
Mediterranean North Pacific Coast Freight Conference (W)
New Zealand/Canada Container Lines Association Conference (E & W)

Notes: E = East Coast; W = West Coast.  
Tariff-filing conferences only.

Source: Canadian Transportation Agency

Shippers benefit from competition within conferences through the independent action provisions contained in

9 Containerisation International; “Packing a Punch — The World’s Top 20 Liner Operators,” November 2000, page 54-59.



**CANADA SHIPPING ACT**

The *Canada Shipping Act* requires that Canadian passenger vessels carrying 12 or more passengers and of 15 gross tonnes or over (formerly five gross tonnes) are required to undergo annual safety inspections by Transport Canada's Marine Safety Branch. Smaller vessels now undergo inspections before the vessel is first put into service and are subject to spot checks in later years.

the *Shipping Conferences Exemption Act*, as well as between conference and non-conference carriers. The competition provisions permit individual conference lines to offer rates or services different from those published as part of the conference tariff. In addition, shipping conference rates paid by shippers can be negotiated through "service contracts" between a conference and a shipper. To comply with the Act, service contracts must be filed with the Canadian Transportation Agency.

For the year 2000, the Agency accepted filings for 94 service contracts from seven conferences, one less than the 95 filed in 1999. The contracts applied to both inbound and outbound traffic and to origins/destinations on both the east and west coasts of Canada. The majority, however, applied to the East Coast. The average duration of the contracts was for one year.

## **MARINE PASSENGER TRANSPORT SERVICES**

### **FERRY SERVICES**

Canada's ferry services vary widely in terms of ownership (from small private operators to provincial governments and federal Crown corporations), vessel types (small cable ferries to large cruise-type vessels and fast ferries) and operations (seasonal to year-round schedules). Ferry companies, municipalities, provincial and federal governments, and private companies also variously own, lease and operate terminal and docking facilities. All major ferry operators in Canada belong to the Canadian Ferry Operators Association (CFOA).

### **Federal Subsidies to Ferry Operations**

In 1995, the National Marine Policy outlined the federal government's goal to make the marine sector more commercially oriented and reduce its involvement in the direct delivery of transportation services. This move was intended to allow the private sector to provide some of these services.

In 1997, Marine Atlantic Inc., a federal Crown corporation, commercialized several of its routes and had its subsidies reduced to approximately \$32 million in 2000/01 from a peak of \$122 million in 1993. The corporation will continue to provide constitutionally guaranteed ferry services between Nova Scotia and Newfoundland.

Federally supported ferry services in Atlantic Canada are now limited to those provided by Marine Atlantic Inc. and by three private-sector operators: Northumberland Ferries Ltd., Bay Ferries Ltd. and C.T.M.A. Traversier Ltée.

As a further example of improved efficiencies and how the National Marine Policy is being successfully implemented in the ferry program, the agreement with Bay Ferries Ltd. has been structured to phase out both operating and capital subsidies by 2000/01. Beginning in 2001, the company will continue to operate as an independent commercial ferry service.

Service to Canadians remains critical in the management of ferry operations. In light of increased demand and anticipated traffic growth between Newfoundland and Nova Scotia, Marine Atlantic Inc. has procured a fourth vessel, the *MV Stena Challenger*, to address fleet capacity requirements. This new vessel will enter into service for the 2001 summer season.

### **CRUISE SHIP INDUSTRY**

The large cruise vessels calling at Canada's ports are owned by foreign-based companies and fly foreign flags. The extended cruises offered by these vessels fall into two basic categories — the luxury cruise and the pocket cruise, distinguished by vessel capacity of more or less than 150 passengers.

Optimism for the continued growth of the international cruise sector continued high in all regions of Canada, where ports are continuing to invest in new infrastructure to serve this growing market. The Vancouver Port Authority has begun construction of a third cruise berth at Canada Place to be ready in time for the 2003 cruise season, at a cost of \$79 million. Also on the West Coast, Prince Rupert is refurbishing its small ship cruise facility in anticipation of 25 pocket cruise ship calls in 2001. They are also looking at the possibility of developing a docking facility for large cruise vessels.

On the East Coast, Halifax opened its Cruise Pavilion in September 1999 and continues to invest in improvements to its facilities. The Canadian government has announced that it is funding the expansion of the cruise ship terminal at Pointe-à-Carcy, in Quebec City's Old Port, with work to be completed in time for the 2001 season.

## OVERVIEW OF MAJOR FERRY SERVICES

**Marine Atlantic Inc. (MAI)**

Marine Atlantic Inc. is the federal Crown corporation that operates the constitutionally guaranteed year-round ferry link between North Sydney, Nova Scotia, and Port aux Basques, Newfoundland, and the seasonal alternative between North Sydney, Nova Scotia, and Argentia, Newfoundland.

**Coastal Transport Ltd.**

Under contract with the Province of New Brunswick, Coastal Transport Ltd. operates year-round passenger/vehicle ferry service to the islands of Grand Manan and White Head, New Brunswick. The ferry to Grand Manan leaves daily from Black's Harbour, New Brunswick, while the White Head Island ferry departs several times a day from Grand Manan at Ingalls Head.

**Woodward Group**

Under contract with the Province of Newfoundland, the Woodward Group operates a single passenger/vehicle ferry service from May to January between Blanc Sablon, Quebec, and St. Barbe, Newfoundland.

**Northumberland Ferries Limited (NFL)**

Under contract with the federal government, NFL provides seasonal passenger/vehicle ferry transportation from May 1 to December 20 between Caribou, Nova Scotia, and Wood Islands, Prince Edward Island.

**Bay Ferries Limited**

Under contract with the federal government, Bay Ferries Limited provides year-round passenger and vehicle ferry service between Saint John, New Brunswick, and Digby, Nova Scotia, and seasonal service from June 1 to mid-October between Yarmouth, Nova Scotia, and Bar Harbor, Maine.

**C.T.M.A. Traversier Ltée**

C.T.M.A. Traversier Ltée provides federally subsidized passenger/vehicle ferry service between Cap-aux-Meules, Magdalen Islands, Quebec, and Souris, Prince Edward Island, during the ice-free period from early April until late January. Under contract with the Province of Quebec, C.T.M.A. also provides a passenger/cargo ferry service from Cap-aux-Meules to Montreal from April to December, and from Cap-aux-Meules to Matane during the winter.

**Newfoundland and Labrador's Department of Works, Services and Transportation**

Newfoundland and Labrador's Department of Works, Services and Transportation provides all the intraprovincial and coastal ferry services under contract with private operators. The department also has responsibility for the Labrador Coastal Service, which was formerly provided by Marine Atlantic Inc.

**La Société des traversiers du Québec (STQ)**

Subsidized by the Quebec transportation ministry, STQ operates five year-round passenger/vehicle ferry services across the St. Lawrence River within the Province of Quebec. STQ also has responsibility for three other provincially subsidized ferry services, which are operated by private companies. These routes include Rivière-du-Loup to Saint-Siméon (operated by CFOA member La Traverse Rivière-du-Loup/Saint-Siméon Ltée), Montmagny to Île-aux-Grues, and Cap-aux-Meules to Île-d'Entrée.

**Quebec Ministry of Transportation**

The Quebec Ministry of Transportation subsidizes a private operator servicing Isle Verte and a water taxi service in St. Augustin. The ministry is also responsible for the adjudication of contracts for transporting supplies to native communities in Northern Quebec.

**Ontario Ministry of Transportation**

The Ontario Ministry of Transportation provides financial support to four year-round ferry operations in eastern Ontario. The Province of Ontario operates the Glenora and the Wolfe Island to Kingston ferries, while the respective township authorities operate ferry services to Amherst and Howe islands.

**Owen Sound Transportation Company (OSTC)**

Owen Sound Transportation Company (OSTC) provides seasonal passenger/vehicle ferry services on Lake Huron between Tobermory, Ontario, and South Baymouth, on Manitoulin Island, from early May until mid-October. OSTC also manages transportation services on Lake Erie between Leamington/Kingsville and Pelee Island, Ontario, and Sandusky, Ohio, from April through December on behalf of the Ontario Ministry of Transportation.

**Manitoba Department of Highways and Transportation**

The Manitoba Department of Highways and Transportation operates seven passenger/vehicle ferries, three motor vessels, and four cable ferries that provide services on lakes and across rivers in the province, including river ferries to Norway House, Matheson Island and Cross Lake.

**British Columbia Ferry Corporation (BC Ferries)**

BC Ferries is a provincial Crown corporation with a fleet of 40 vessels on 26 routes, serving 43 marine terminals, as well as seven other sites. The British Columbia government receives a federal grant for the provision of ferry services in coastal waters. BC Ferries is the largest ferry operation in North America.

**British Columbia's Ministry of Transportation and Highways**

British Columbia's Ministry of Transportation and Highways operates and maintains British Columbia's inland ferry service and contracts with a private operator for the provision of a tug and barge ferry service. The ministry also subsidizes a private ferry service on one of the province's interior lakes.

Alaska cruises through British Columbia's scenic Inside Passage are the third most popular cruise in the world, after the Caribbean and the Mediterranean. Most luxury cruise vessels sailing to Alaska use the Port of Vancouver as their home port (where passengers embark and/or disembark) because the *US Passenger Vessel Act* prohibits foreign-flag vessels from carrying passengers between US ports. Trips between Vancouver and Alaska also fit conveniently into a seven-day time frame. Seattle has recently opened a new cruise facility and has attracted calls by the Norwegian Cruise Line during 2000. Ships calling in Seattle and travelling to Alaska include a call at Vancouver/Victoria in their itinerary in order to comply with the *US Passenger Vessel Act*. Three-to-four-day pocket cruises were also operated out of Seattle in 2000 with calls in Vancouver and Victoria and proved popular.

In eastern Canada, luxury cruise ships regularly sail out of New York and up the eastern seaboard with calls at Halifax, Charlottetown and other East Coast ports before entering the St. Lawrence River, where they call at Quebec City and Montreal. Shorter cruises out of New York or Boston travel northward to Halifax, Saint John and other Atlantic ports. The cruising season used to be concentrated in the fall colour season but now extends over several months, beginning as early as May or June. The world's major cruise lines — including Carnival, Royal Caribbean, Cunard, Princess, Holland America, and others — all call at eastern Canadian ports. Pocket cruises travel the St. Lawrence River between Montreal or Quebec City and Kingston or Rochester, or even travel by canal through New York State up to Lake Ontario and then into the St. Lawrence River. Vessels travelling into or out of the Great Lakes on repositioning voyages also call at Quebec and Atlantic ports en route.

On the Great Lakes, Hapag Lloyd's luxury vessel, *Columbus*, with accommodation for 420 passengers, continued to offer its popular cruises during 2000. The French yacht, *Le Levant*, carrying 90 passengers, also called again in 2000. Other pocket cruise vessels are also operating. Windsor has been chosen as the home port for the 225-passenger *Arcadia*, beginning calls in 2001. Seventeen US and Canadian Great Lakes ports (including Chicago, Toronto and Thunder Bay) joined together in 1999 to found the Great Lakes Cruising Coalition to market the area.

Local Canadian operators also offer a multitude of lock, harbour and river cruises, as well as excursions for such activities as whale watching.

## AIR TRANSPORTATION INDUSTRY

### MAJOR EVENTS IN 2000

#### INDUSTRY RESTRUCTURING

The year 2000 saw the first major changes in Canada's air transportation industry in over 10 years. In January, following the government's approval of Air Canada's acquisition of Canadian Airlines International Ltd. on December 21, 1999, the two carriers started co-operating on those routes where they historically offered competing services. In April, the services of the two airlines were combined. In July, Canadian Airlines became a wholly owned subsidiary of Air Canada. Air Canada's October schedule fully integrated the operations of the two airlines and all their regional affiliates and commercial partners. Air Canada can now be ranked as the 12th largest airline in the world and 7th largest in North America.

Although the corporate restructuring was completed within 2000, the federal government recognized that 18 to 24 months would be needed for the two carriers to complete consolidation and for other Canadian competitors to increase their presence in the domestic marketplace.

#### The Acquisition of Canadian Airlines by Air Canada

On January 4, 2000, 853350 Alberta Ltd., a corporation owned in part but fully financed by Air Canada, acquired approximately 82 per cent of the common and non-voting common shares of Canadian Airlines Corporation. The numbered Alberta company subsequently acquired all of the preferred shares of Canadian Airlines Corporation.

The numbered Alberta company was used by Air Canada to mitigate any possible liability to the Air Canada shareholders that could have arisen as a result of the severe financial distress of Canadian Airlines. During the first six months of the year, Canadian Airlines continued as a separate legal entity, but operational integration within Air Canada was gradually increased. On June 27, 2000, the Alberta Court of Queen's Bench approved the Canadian Airlines Corporation's Plan of Compromise and Arrangement under the *Companies' Creditors Arrangement Act*, permitting it to restructure its debts. Subsequently, on July 5, 2000, Air Canada acquired the remaining interest in 853350 Alberta Ltd. that it did not already own, making Canadian Airlines a wholly owned subsidiary.



Air Canada is obliged by its commitments to the Minister of Transport to ensure that Calm Air, Air NorTerra doing business as Canadian North, and Air Georgian receive the support services previously provided by Canadian Airlines for a period of three years. It also committed to no involuntary lay-offs or relocations of unionized employees of the airlines and their wholly owned subsidiaries through March 2002. In addition, Air Canada committed to ensuring that services would be maintained for three years to all the communities served by it, Canadian Airlines and their wholly owned regional affiliates.

### The Legislation

On February 17, 2000, the federal government introduced Bill C-26<sup>10</sup> as its legislative response to the restructuring of Canada's airline industry and, in particular, the acquisition of Canadian Airlines by Air Canada. Bill C-26 addressed the government's plan for protecting the public interest set out in *A Policy Framework for Airline Restructuring in Canada*, released by the Minister of Transport on October 26, 1999, which could not be implemented without amendments to existing legislation. The Bill also proposed to entrench into law the commitments and undertakings that were made by Air Canada to the Minister of Transport and the Commissioner of Competition. It also reflected many of the recommendations made by the standing committees of the House of Commons and Senate, which were tasked with reviewing the policy framework in 1999.

Bill C-26 introduced amendments to the *Canada Transportation Act* (1996) designed to respond to the present and future restructuring of the airline industry. It set out a new process for the review of significant mergers and acquisitions in the air mode. The Bill provides for a full review by the Commissioner of Competition, the Minister of Transport and the Canadian Transportation Agency, but gives the Government of Canada the final decision and allows the government to attach terms and conditions. It was this process that was used to review Air Canada's acquisition of Canadian Airlines.

Amendments were also made to the *Canada Transportation Act* with respect to exit provisions, prices on monopoly routes, domestic terms and conditions of carriage, exclusive use clauses in confidential contracts, and the establishment of an Air Travel Complaints

Commissioner within the Canadian Transportation Agency to deal with growing consumer complaints (see Chapter 13 "Passenger Transportation" for details).

With a view to fostering competition, Bill C-26 also amended the *Competition Act* to include behaviour by a person operating a domestic air service in its listing of anti-competitive behaviour; and allow the Governor-in-Council to define, by regulation, anti-competitive acts or predatory behaviour in the airline industry.<sup>11</sup> It also gave the Commissioner of Competition the power to issue temporary cease and desist orders in cases of predatory behaviour in the airline industry. Travel agents were specifically named as being able to collectively negotiate commissions on ticket sales for domestic flights without being in contravention of this Act.

The Bill also amended the *Air Canada Public Participation Act* to officially deem the acquisition of Canadian Airlines approved and to make the commitments and undertakings given by Air Canada legally binding and enforceable. Included in these undertakings were the issues of surrendering slots and facilities at airports; offering Canadian Regional Airlines Limited for sale; providing access to Air Canada's frequent flyer program, joint fare agreements and interlining; and changing the way incentive override commissions are paid to travel agents for sales of domestic air travel.

Bill C-26 amended this same Act to place an obligation on Air Canada to ensure that its subsidiaries, both existing and future, will provide services in both official languages in those cases where Air Canada would have been required to do so and where there is significant demand as defined by the *Official Languages Act*. Transition periods are provided to take into account operational difficulties related to implementation in Western Canada and points previously served only by Canadian Airlines and Canadian Regional Airlines.

Finally, the *Air Canada Public Participation Act* was also amended to increase the individual voting share ownership limit from 10 per cent to 15 per cent.

Bill C-26 was given Royal Assent on June 29, 2000, and was proclaimed into law on July 5, 2000.

10 Entitled "An Act to amend the *Canada Transportation Act*, the *Competition Act*, the *Competition Tribunal Act* and the *Air Canada Public Participation Act* and to amend another Act in consequence."

11 These regulations came into effect on August 23, 2000, - SOR/2000-324. (Published in Canada Gazette, Part II, Statutory Order and Regulations, year 2000, 324th order in the year.)



## MAJOR COMMERCIAL AIR SERVICES

With its acquisition of Canadian Airlines, Air Canada reinforced its position as the nation's largest airline, with more than 80 per cent of the capacity offered in Canada.<sup>12</sup> Airlines not affiliated with Air Canada but also providing domestic air services using large jet aircraft include Canada 3000 Airlines Limited, Royal Aviation, First Air, Air NorTerra doing business as Canadian North, WestJet Airlines Ltd. and CanJet Airlines. Air Transat AT Inc. and SkyService Airlines Inc. also operated domestic jet air services but for tour operators and only on a seasonal basis.

Scheduled air services are largely defined by Air Canada, which, along with its wholly owned subsidiaries and commercial partners, provided the only comprehensive Canadian network of domestic, transborder and international air services. This network is further enhanced and expanded by Air Canada's membership in the STAR Alliance. It and other comprehensive global alliances of international airlines are able to offer, through code-sharing,<sup>13</sup> a seamless travel experience on one ticket, even if more than one airline within the alliance is involved in the itinerary. Canadian Airlines ceased to be a member of the Oneworld global alliance on June 1, 2000, and became a member of the STAR Alliance by virtue of its status as an Air Canada subsidiary. Table 11-12 sets out global airline alliances in 2000.

**TABLE 11-12: GLOBAL AIRLINE ALLIANCES, 2000**

STAR	Oneworld	Wings	Delta/Air France
Air Canada	Aer Lingus	Braathens	AeroMexico
Air New Zealand	American Airlines	Continental Airlines	Air France
All Nippon Airways	British Airways	Kenya Airways	Delta Airlines
Ansett Australia	Cathay Pacific	KLM Royal Dutch Airlines	Korean Airlines
Austrian Airlines	Finnair	KLM UK	
British Midland	Iberia	Northwest Airlines	
Lufthansa	LanChile		
Mexicana Airlines	Qantas		
SAS Scandinavian Air System			
Singapore Airlines			
Thai Airways International			
United Airlines			
VARIG			
<b>Associated:</b>	<b>Associated:</b>	<b>Associated:</b>	<b>Associated:</b>
	Air Pacific	Air China	
	Japan Airlines	Japan Air System	
	Sabena	Malaysia Airlines	
	Swissair		

Source: Alliance Web sites, Airline Business Monthly Publication

Canada's other operators of large jet aircraft equipment continued to be the price leaders for long-haul travel. These operators include Canada 3000 Airlines, Royal Aviation, Air Transat and SkyService. Their presence provided extra capacity and, notwithstanding fuel price increases during 2000, disciplined the price of air fares. Canada 3000 and Royal Aviation evolved rapidly from their charter air services roots into scheduled air service operators, coinciding with the consolidation and realignment of capacity on medium and long-haul routes by Air Canada following its acquisition of Canadian Airlines.

Tables 11-13 and 11-14 show the capacity share of Air Canada and the other significant Canadian operators of air services in Canada's domestic and international markets for December 1999 and 2000.

**TABLE 11-13: CAPACITY SHARES OF AIRLINES, DECEMBER 1999**

	Trans-continental	Western Canada	Eastern Canada	Northern Canada	Total Domestic
<b>Domestic Markets</b>					
Average Daily Seat-Kilometres (thousands)	62,686	25,066	29,346	4,029	121,127
<b>Per cent of Shares</b>					
Air Canada and affiliates	53	29	63	15 <sup>1</sup>	50
Canadian and affiliates	39	37	24	58 <sup>2</sup>	36
WestJet	0	25	0	0	5
Royal Airlines	1	3	4	0	2
Canada 3000	5	2	3	0	4
Air Transat	2	0	1	0	1
First Air	0	0	1	20	1
Other	0	4	4	7	2
	Trans-border	Atlantic	Pacific	Southern	Total International
<b>International Markets</b>					
Average Daily Seat-Kilometres (thousands)	121,568	111,406	73,013	41,298	347,285
<b>Per cent of Shares</b>					
Air Canada and affiliates	35	36	17	18	29
Canadian and affiliates	15	13	35	5	18
Foreign Airlines	41	44	45	8	39
Charter Airlines	9	7	3	69	14

Note: Percentages may not add up to 100 per cent due to rounding.

1 Flights shown here are operated by NWT Air on behalf of Air Canada. NWT Air is owned by First Air which operates under its own code.

2 Canadian North/Air NorTerra services were included in Canadian Airlines for 1999.

Source: Published airline schedules and historical data

The consolidation and realignment of domestic capacity by Air Canada prompted a response from low-cost jet operators. WestJet Airlines expanded its flight frequencies, capacity and networks in 2000. Established in February 1996, WestJet took delivery of four 125-seat B737-200 aircraft to bring its fleet total to 21. These aircraft were used to increase flight frequency and add three locations to its network. As a western-based

12 In terms of daily seats offered, Air Canada's share has moved down from 82.5 per cent in December 1999 to 71.5 per cent in December 2000.

13 Code-sharing is the ability to sell air travel under one airline's name on the flights of another airline. In the international context, code-sharing allows airlines to sell transportation on the network of services of code-share partners as if it was their own. In addition, by co-ordinating their marketing efforts, alliance partners can provide a combined product to the consumer, including common check-in, better co-ordinated connections, and priority baggage transfers.

**TABLE 11-14: CAPACITY SHARES OF AIRLINES,  
DECEMBER 2000**

	<i>Trans- continental</i>	<i>Western Canada</i>	<i>Eastern Canada</i>	<i>Northern Canada</i>	<i>Total Domestic</i>
<b>Domestic Markets</b>					
Average Daily Seat-Kilometres (thousands)	63,508	22,723	32,394	4,057	122,682
Per cent of Shares					
Air Canada and affiliates	87	61	74	33 <sup>1</sup>	77
WestJet	2	33	2	0	8
CanJet	2	0	7	0	3
Royal Airlines	3	0	8	0	4
Canada 3000	5	2	3	0	4
Air Transat	2	0	1	0	1
First Air	0	0	1	20	1
Other	0	4	4	48 <sup>2</sup>	3
<b>International Markets</b>	<i>Trans- border</i>	<i>Atlantic</i>	<i>Pacific</i>	<i>Southern</i>	<i>Total Inter- national</i>
Average Daily Seat-Kilometres (thousands)	136,169	116,207	75,279	43,970	371,625
Per cent of Shares					
Air Canada	47	52	55	21	47
Foreign Airlines	41	41	42	14	38
Charter Airlines	11	6	3	65	15

Note: Percentages may not add up to 100 per cent due to rounding.

<sup>1</sup> Flights shown here are operated by NWT Air on behalf of Air Canada. NWT Air is owned by First Air which operates under its own code.

<sup>2</sup> Canadian North/Air NorTerra services were included in Canadian Airlines for 1999.

Source: Published airline schedules and historical data

operator, WestJet made the move in early 2000 to expand east of Winnipeg, adding Hamilton to its network in March, Moncton in April and Ottawa in June. At year-end, WestJet was offering its low-fare passenger air services to 15 Canadian cities.<sup>14</sup>

CanJet Airlines, Canada's newest airline offering scheduled jet services, began low-cost operations on September 5, 2000, with up to three daily frequencies between Toronto, Ottawa and Halifax, as well as two daily frequencies between Toronto and Windsor. At the end of September, CanJet added schedule frequencies to Winnipeg, Montreal and St. John's. CanJet subsequently left the Windsor market on November 27, 2000, citing unsustainable economics. Nevertheless, CanJet continued to grow, adding a sixth 120-seat B737-200 jet to its fleet and expanding to more than 250 flights a week to points in central and eastern Canada.<sup>15</sup>

At year-end, the transition toward a more competitive environment continued. Air carriers such as WestJet, Canada 3000 and Royal Aviation increased their route networks and put several new planes on order to further expand services. In addition, two other companies, Roots Air and London Air, formally announced their interest in becoming licensed operators of air services in 2001.

Table 11-15 shows the type of aircraft in the fleets of a number of Canadian air carriers.

**TABLE 11-15: AIRCRAFT OF SELECTED CANADIAN  
CARRIERS IN PASSENGER SERVICE**

<i>Carrier</i>	<i>Wide- bodied</i>	<i>Narrow- bodied</i>	<i>Propeller- driven</i>	<i>Total</i>
Air Canada	74	167	0	241
Air Canada wholly owned affiliates:				
Air BC	0	5	14	19
Air Nova	0	5	36	41
Air Ontario	0	0	28	28
Canadian Regional	0	28	16	44
Air Canada other partners:				
Calm Air International	0	0	11	11
Air Georgian/Ontario Regional	0	0	13	13
Central Mountain Air	0	0	14	14
Canadian North <sup>1</sup>	0	4	0	4
Air Transat	18	5	0	23
Canada 3000 <sup>2</sup>	4	13	0	17
Royal Aviation <sup>2</sup>	4	12	1	17
First Air	0	7	19	26
CanJet	0	6	0	6
SkyService <sup>3</sup>	0	5	3	8
WestJet	0	22	0	22
<b>Total</b>	<b>100</b>	<b>279</b>	<b>155</b>	<b>534</b>

<sup>1</sup> Operated by Air NorTerra Inc.

<sup>2</sup> Canada 3000 and Royal Aviation will merge in 2001.

<sup>3</sup> Will be operating as a full service airline under the name, Roots Air.

Source: BACK/Lundkvist Fleet Database and carriers' Web sites, as of December 31, 2000

In terms of cargo, Kelowna Flightcraft continued its arrangement with Canada's largest courier operator, Purolator, to provide its daily flying requirements. In addition, a number of Canadian air carriers act on behalf of integrated courier operators to move time-sensitive goods within Canada. These carriers include All Canada Express, 2734141 Canada Inc. doing business as Knighthawk Air Express, Morningstar Air Express Inc., ICC International Cargo Charter Canada Ltd., Western Express Air Line Inc., Airwave Transport, Perimeter Airlines (Inland) Ltd., Royal Cargo and First Air. Table 11-16 shows these Canadian operators and their affiliated courier companies.

**TABLE 11-16: CANADIAN AIR CARGO AIRLINES**

<i>Operator</i>	<i>Courier/All-Cargo Company</i>
Kelowna Flightcraft	Purolator/ Royal
All Canada Express	BAX/UPS/DHL/Royal
Royal Cargo	Royal
Morningstar	Fed Ex
Knighthawk Air Express	Fed Ex
ICC Canada	Emery
First Air	Emery

Source: Transport Canada, Air Policy

<sup>14</sup> These cities include Victoria, Vancouver, Abbotsford/Fraser Valley, Prince George, Kelowna, Calgary, Edmonton, Grande Prairie, Saskatoon, Regina, Winnipeg, Thunder Bay, Hamilton, Ottawa and Moncton.

<sup>15</sup> At year-end, CanJet was serving Winnipeg, Toronto (Pearson Terminal III), Ottawa, Montreal (Dorval), Halifax and St. John's.

A breakdown of the number of air carrier licence authorities that operate to, from and within Canada are listed in Table 11-17. This table includes all the authorities held to operate scheduled, non-scheduled and all-cargo services.

**TABLE 11-17: LICENCE AUTHORITIES HELD AS OF DECEMBER 31, 2000**

Type	----- Canadian -----				--- Other ---	
	Small	Medium	Large	All-Cargo	US	Foreign
Classification						
Domestic	861	22	13	33	-	-
International						
Scheduled	13	28	74	5	49	59
Non-Scheduled	427	20	11	25	756	85
Total Type	1,301	70	98	63		
Total Canadian	----- 1,532 -----					
Total US					805	
Total Other Foreign						144

Note: Represents licence authorities, not the number of carriers; e.g. a carrier can hold multiple licence authorities.

Source: Canadian Transportation Agency

## REGIONAL AND LOCAL AIR SERVICES

During 2000, the regional and local air services provided by Air Canada's subsidiaries and commercial partners (including Canadian Airlines' regional air service provider, Canadian Regional Airlines) underwent an extensive review following Air Canada's acquisition of Canadian Airlines.

As part of the understanding made by Air Canada to the Commissioner of Competition on December 21, 1999, Canadian Regional Airlines was to be offered for sale for a 60-day period for no less than an amount agreed to between Air Canada and the Competition Bureau. The carrier, with 2,000 employees and 51 aircraft, serves 38 points in seven provinces and five states, but has its main focus in western Canada. On August 29, 2000, the 60-day period expired with no acceptable bids received. Air Canada was therefore able to keep the carrier and announced its intention to merge Canadian Regional Airlines with its other regional carriers to focus on regional and local air services, with a head office in Halifax and a western hub in Calgary. Together, the merged entity would operate with 4,900 employees and 134 aircraft. The full integration of the regional affiliates had not yet been completed at the end of 2000.

Table 11-18 shows the regional carriers in commercial partnership with Air Canada as of December 31, 2000.

**TABLE 11-18: AIR CANADA'S DOMESTIC CODE-SHARE PARTNERS AS OF DECEMBER 31, 2000**

100 per cent owned affiliates	Other partners
Air BC	Air Creebec
Air Nova	Air Georgian
Air Ontario	Aviation Quebec Labrador
Canadian Regional	Calm Air
	Central Mountain Air
	Labrador Airways
	NTW Air <sup>1</sup>

1 Owned by First Air.

Source: Air Canada

Independent airlines (those not affiliated with either Air Canada or Canadian Airlines) avoided competing directly with Air Canada's regional affiliates. This resulted in little overlap among their services and those provided through the Air Canada network. Independent carriers are most prominent in the northern parts of Canada. However, some independent carriers, notably Hawkair, Provincial Airlines and Régionnair, pursued more aggressive strategies, competing with Air Canada's regional affiliates. Table 11-19 lists a number of independent airlines and their major bases of operation.

Inter-Canadien, an independently owned commercial partner of Canadian Airlines that provided regional services in Quebec and the Atlantic provinces ceased operations in late November 1999 while it attempted to restructure its debt. Canadian Regional Airlines and Air Georgian, along with Air Nova, and Régionnair adjusted their schedules and expanded their services to ensure most of the communities in remote areas of Quebec and northern New Brunswick previously served by Inter-Canadien continued to receive scheduled air services. Although Inter-Canadien initially announced its intention to resume service in early 2000, it did not.



**TABLE 11-19: LOCAL SERVICE OPERATORS PROVIDING SCHEDULED AIR SERVICES AS OF DECEMBER 31, 2000**

<i>Airline</i>	<i>Major Base(s)</i>
Air Creebec	Montreal, Timmins and Val d'Or
Air Mikisew	Fort McMurray
Air North	Whitehorse
Air Tindi Ltd.	Yellowknife
Aklak Air	Inuvik
Aviation Quebec Labrador	Sept-Îles
Bearskin Airlines	Sudbury and Thunder Bay
Buffalo Airways Ltd.	Yellowknife
Calm Air International Ltd.	Thompson, Rankin Inlet
Capital City Air <sup>1</sup>	Edmonton
Harbour Air Ltd.	Vancouver Harbour
Hawkair	Terrace
Helijet Airways	Victoria Harbour and Vancouver Harbour
K.D. Air	Vancouver
Keewatin Air Limited	Rankin Inlet and Churchill
Kenn Borek Air	Iqaluit and Resolute
Keystone Air Service	Winnipeg
Labrador Airways	Goose Bay and St. John's
Nakina Air Service Ltd.	Thunder Bay
North Vancouver Air	Vancouver
Northwestern Air Lease Ltd.	Grande Prairie and Yellowknife
North-Wright Airways Ltd.	Norman Wells and Yellowknife
Pacific Coastal Airlines Limited	Vancouver
Peace Air	Edmonton
Perimeter Airlines	Winnipeg
Provincial Airlines	Goose Bay and St. John's
Régionnaire Inc.	Sept-Îles
Skyward Aviation Ltd.	Rankin Inlet and Thompson
Transwest Air <sup>2</sup>	Saskatoon
Trillium Air	Kitchener
West Coast Air	Vancouver Harbour

1 Capital City Air announced that it was merging its operations into Peace Air in the fall of 1999. It announced later in February 2000 that its talks with Peace Air failed and it was ceasing operations.

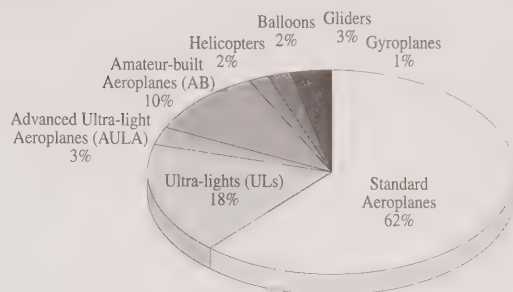
2 Air Sask and Athabasca Airways merged in 2000 to form Transwest Air.

Source: Official Airline Guide

## GENERAL AVIATION

The general aviation sector is made up of all types of aviation activity, except air transportation of passengers or goods, and includes both recreational and commercial flying activities.

General aviation represents about 50 per cent of all aircraft movements at airports with air navigation services, although much of the activity was at non-controlled airports. Recreational flying in its various forms accounts for the majority of general aviation activity. It represents two-thirds of Canada's pilots and three quarters of all aircraft registered in Canada in 2000, and it is the largest segment of Canadian civil aviation activity. Details about the recreational aviation fleet can be found in Figure 11-6 and Table 11-20. In addition, Tables 11-21 and 11-22 summarize the number of pilot licences and permits issued by category and province.

**FIGURE 11-6: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000**

Note: Airships and ornithopters are included in the balloon and gyroplane categories, respectively.

Source: Canadian Civil Aircraft Register

**TABLE 11-20: PROFILE OF THE RECREATIONAL AVIATION FLEET AS OF DECEMBER 31, 2000**

<i>Type of aircraft</i>	<i>Total aircraft</i>
Standard Aeroplanes	13,366
Ultra-lights (ULs)	3,850
Advanced Ultra-light Aeroplanes (AULAs)	617
Amateur-built Aeroplanes (AB)	2,281
Helicopters	390
Balloons <sup>1</sup>	442
Gyroplanes <sup>2</sup>	600
Gyroplanes <sup>2</sup>	187
<b>Total Private registered aircraft</b>	<b>21,733</b>

1 Includes airships.

2 Includes ornithopters.

Source: Canadian Civil Aircraft Register

**TABLE 11-21: SUMMARY OF PERSONNEL LICENCES AND PERMITS AS OF DECEMBER 2000**

	<i>In Force</i>	<i>Issued in 2000</i>	<i>Male</i>	<i>Female</i>
<b>Aeroplanes</b>				
Private Pilots	28,240	2,860	26,628	1,612
Commercial Pilots	9,625	1,370	9,041	584
Airline Transport Pilots	11,087	661	10,744	343
Total	48,952	4,891	46,413	2,539
<b>Helicopters</b>				
Private Pilots	384	66	371	13
Commercial Pilots	2,793	218	2,726	67
Airline Transport Pilots	726	63	713	13
Total	3,903	347	3,810	93
<b>Permits</b>				
Glider Pilot	5,991	424	5,296	695
Gyroplane Pilot	32	7	31	1
Balloon Pilot	267	11	245	22
Ultra-Light Pilot	2,534	199	2,452	82
Recreational Pilot	1,121	223	1,052	69
Total	9,945	864	9,076	869
<b>Other Licences</b>				
Flight Engineers	537	19	526	11
Air Traffic Controllers	1,986	56	1,832	154
Total	2,523	75	2,358	165
<b>Total Licences &amp; Permits</b>	<b>65,323</b>	<b>6,177</b>	<b>61,657</b>	<b>3,666</b>

Source: Transport Canada, Safety and Security



**TABLE 11-22: PERSONNEL LICENCES AND PERMITS BY PROVINCE, AS OF DECEMBER 2000**

	<i>Number of Licences</i>	<i>Per cent of Total</i>
British Columbia	13,838	19.1
Alberta	9,567	13.2
Saskatchewan	2,901	4.0
Manitoba	3,618	5.0
Ontario	24,382	33.6
Quebec	12,925	17.8
New Brunswick	1,131	1.6
Nova Scotia	2,054	2.8
Prince Edward Island	182	0.3
Newfoundland	1,206	1.7
Yukon	335	0.5
Northwest Territories	447	0.6
<b>Canada</b>	<b>72,586</b>	<b>100</b>

Note: Student Pilot Permits are included in the provincial numbers.

Source: Transport Canada, Safety & Security

## SPECIALTY AIR SERVICES

Specialty air services are made up of a variety of industrial and agricultural air activities that share the common characteristic of not involving the movement of passengers or cargo between two points. These activities include parachute jumping, glider towing, aerial forest fire management and firefighting, aerial inspection and construction, aerial photography and surveying, advertising, meteorological services, crop spraying, heli-logging and air-cushion vehicle services (hovercraft). While some large companies take part in these specialty activities, the majority of companies in this sector are small operators serving local requirements.

## BUSINESS AVIATION

Business aviation continued to grow in 2000 for the sixth consecutive year. One factor fuelling this growth is the desire of corporations to move executives and staff more efficiently than commercial airline services. A strong economy, international business interests, and a wider selection of aircraft types have helped to expand this sector. One option that is adding exponential growth in the United States and Europe is the use of "fractional ownership," whereby individuals or businesses that would not otherwise own an aircraft by themselves share its use in a program by selling units of flight time. Fractional ownership in Canada is in its infancy, due in part to market size. In Canada, fractional ownership programs are regulated as commercial air activities. Fractional ownership has significant growth potential for the business aviation sector and will be followed closely during the next few years.

# FREIGHT TRANSPORTATION 12

*The freight flows continued to be driven by  
the sustained growth of the Canadian economy.*

This chapter looks at freight transportation, discussing domestic, and when possible, international freight movements, by mode. This approach best demonstrates what use is made of each mode of transportation.

This chapter also discusses freight traffic by commodity group. The rail and truck modes use tonne-kilometres when referring to freight. Capturing both volume and distance, this unique physical measurement of freight movement helps assess trends in traffic.

## RAIL TRANSPORTATION

In its Canadian operations, CN's revenue tonne-kilometres rose to 158 billion, up from 154 billion in 1998, while CPR's revenue tonne-kilometres dropped slightly to 113 billion, from 115 billion the previous year.

However, Class II carriers — regional and shortline railways — experienced an estimated six per cent decrease in output in 1999, returning to a traffic level close to that of 1997, with approximately 28 billion revenue tonne-kilometres. While several new operations contributed to an increase in output, a drop in iron ore traffic resulted in an overall decrease.

Output for both CN's and CPR's systems (Canadian and US operations) increased again in 2000. CN reported 218 billion revenue tonne-kilometres, up from 210 billion in 1999 (including Illinois Central output), while CPR reported 161 billion tonne-kilometres, up from 146 billion in 1999.

As a result, figures for Canadian operations are also expected to rise for the year 2000. The estimated output (based on three quarters of data on Canadian operations and four quarters of system data) is 120 billion revenue tonne-kilometres for CPR and 165 billion revenue tonne-kilometres for CN.

## RAIL TRAFFIC — TRADE WITH THE US

### EXPORTS

In 1999, exports increased 4.8 per cent over 1998 levels in terms of tonnage to 59 million tonnes and 25 per cent in terms of value. As Table 12-1 shows, exports in certain commodity sectors decreased, namely coal, agricultural and food products, and fertilizers. On the other hand, exports in some sectors increased significantly. Forest products comprised the most prominent sector in terms of tonnage, accounting for 36 per cent of total export tonnage. In terms of value, however, forest products ranked second to automotive vehicles and parts, which accounted for nearly 55 per cent of the value of exports. Trade in vehicles and parts rose by 35 per cent in terms of tonnage and 45 per cent in terms of value, and was the main contributor to the overall increase in the value of exports.

Ontario was the major contributor to growth, with 1.2 million more tonnes exported than in 1998; over half of this increase was attributable to automotive products. As Table 12-2 shows, Ontario continued to account for the largest portion of exports, increasing its share marginally to 29.4 per cent of tonnage. Saskatchewan, Alberta, Quebec and British Columbia had shares ranging from 14 to 19 per cent. In terms of percentage growth in exports in 1999, however, the other provinces and territories experienced the greatest increase. Prince Edward Island nearly tripled its exports eventually crossing the US border by rail, while Nova Scotia saw a 75 per cent increase. The territories also increased their rail exports substantially. For each of these regions, forest products, lumber and wood pulp in particular, were the main contributors to growth.

**TABLE 12-1: GROWTH IN RAIL EXPORTS AND IMPORTS BY COMMODITY, 1998 AND 1999**

	Exports				Imports			
	1999 tonnage (000)	Per cent growth over 1998	1999 value (\$ millions)	Per cent growth over 1998	1999 tonnage (000)	Per cent growth over 1998	1999 value (\$ millions)	Per cent growth over 1998
Grain	4,053	4.3	747	(3.8)	466	12.2	164	5.4
Other agriculture and food	1,461	(1.5)	883	(7.9)	2,317	47.7	1,054	(5.9)
Automotive	2,737	35.3	38,831	44.9	670	13.5	10,706	4.9
Chemicals	8,893	(0.2)	4,589	7.9	4,534	5.5	4,054	3.0
Coal	410	(11.9)	39	3.6	161	(9.5)	15	(12.7)
Fertilizers	7,955	(4.0)	997	(1.6)	69	(14.7)	13	(28.3)
Forest products	21,147	7.4	15,372	12.0	1,108	(5.6)	641	0.6
Manufactured products	1,597	10.8	4,286	2.3	1,818	(65.3)	2,564	(33.4)
Metals	3,232	0.8	4,013	(2.3)	1,293	10.4	746	0.4
Mine products	4,121	11.5	307	24.4	2,552	40.9	77	42.6
Petroleum products	3,373	5.1	880	17.5	408	(42.8)	160	(19.9)
<b>Total</b>	<b>58,979</b>	<b>4.8</b>	<b>70,945</b>	<b>24.8</b>	<b>15,397</b>	<b>(10.7)</b>	<b>20,194</b>	<b>(3.5)</b>

Note: 1998 figures reported in *Transportation in Canada 1999* have since been revised.

Source: Statistics Canada, International Trade Division

## IMPORTS

From 1998 to 1999, rail imports decreased in tonnage by 11 per cent to 15.4 million tonnes, and in value by 3.5 per cent to \$20.2 billion. As Table 12-1 shows, increases in the imports of relatively low-valued mine products and agricultural and food products were outweighed by decreases in the imports of higher-valued manufactured products. In terms of commodity shares, chemicals ranked the highest, with a 29 per cent share of total tonnage. By value, automotive products accounted for over half of imports, by far the largest share.

Table 12-2 shows that about half of all imports were cleared through customs in Ontario; this province also contributed the largest increase in imported tonnage from 1998 to 1999 (0.9 million tonnes). British Columbia and Quebec each accounted for 14 per cent of imports (cleared), while Alberta, Saskatchewan and Manitoba together cleared 20 per cent.

**TABLE 12-2: TRANSBORDER RAIL TRAFFIC BY PROVINCE, 1999**

(Thousands of tonnes)

Province of origin (Exports)/ Province of clearance (Imports)	Exports	Imports
Newfoundland	18	0
Prince Edward Island	18	0
Nova Scotia	941	19
New Brunswick	1,500	469
Quebec	8,564	2,190
Ontario	17,324	7,484
Manitoba	2,101	812
Saskatchewan	11,123	999
Alberta	9,063	1,252
British Columbia	8,315	2,171
Northwest Territories	2	0
Yukon	10	0

Source: Statistics Canada, International Trade Division

## RAIL TRAFFIC — OVERSEAS TRADE

Each year, shipments to and from Canadian ports account for a substantial amount of rail traffic. In 1999, Class I railways carried 84.8 million tonnes of goods to and from Canadian ports.

### RAIL — MARINE EXPORTS

Grain, sulphur, gypsum, coal and potash accounted for 84 per cent of the 77.7 million tonnes shipped to port by Class I carriers. At 32.4 million tonnes, coal was the largest of these commodities, followed by grain at 20.2 million tonnes. Potash, sulphur and gypsum accounted for 5.1, 4.4 and 3.1 million tonnes, respectively, while forest products accounted for a further 2.5 million tonnes.

Intermodal shipments, mostly mixed and finished goods, totalled 6.4 million tonnes, or eight per cent of total rail-marine exports. Ontario accounted for 1.9 million tonnes of intermodal shipments, followed by the United States at 1.7 million tonnes and Quebec at 1.3 million tonnes.

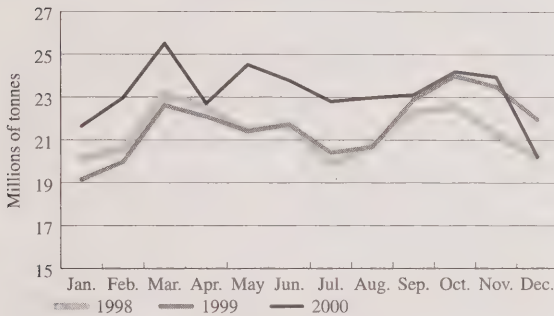
### RAIL — MARINE IMPORTS

In 1999, Class I rail shipments from marine ports remained unchanged from the previous year, at 7.1 million tonnes, 84 per cent of which consisted of intermodal movements. Phosphate rock, with 0.7 million tonnes imported, remained the most prominent single commodity. Of all goods shipped in from marine ports, the majority went to Ontario (2.6 million tonnes), followed by Quebec (2.1 million tonnes) and the United States (1.1 million tonnes). British Columbia was the end destination for just under one million tonnes of goods shipped in from port by rail.

## RAIL TRAFFIC — COMMODITY SECTORS

Annual rail loadings reached their highest levels in over a decade, with 278 million tonnes loaded in 2000.<sup>1</sup> Volumes were approximately split between eastern and western loadings, although the commodity mixes differed geographically. Ores and mine products, forest products and intermodal shipments dominated in the east, while grain, coal and fertilizers were the major commodities loaded in the west. Figure 12-1 shows monthly loadings from 1998 to 2000.

FIGURE 12-1: TOTAL MONTHLY LOADINGS BY RAIL, 1998 – 2000

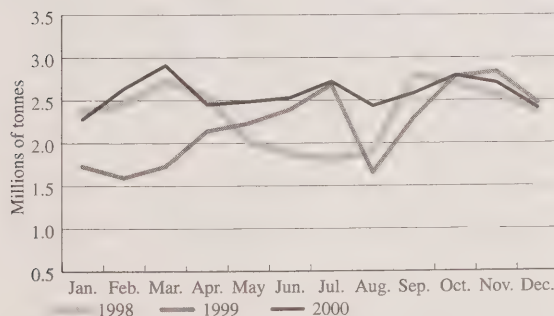


Source: Statistics Canada, Cat. 52-001; Transport Canada

### GRAIN

Grain traffic in 2000 exceeded that of the previous two years as shown in Figure 12-2. Annual tonnage reached 30.9 million, almost 17 per cent higher than in 1999. Grain continued to be one of the most important commodities shipped by rail, accounting for 11 per cent of total annual tonnage loaded.

FIGURE 12-2: MONTHLY GRAIN LOADINGS BY RAIL, 1998 – 2000



Source: Statistics Canada, Cat. 52-001; Transport Canada

## FOREST PRODUCTS

Loadings of processed forest products such as lumber and paper continued to grow, up about six per cent from 1999 to 23.7 million tonnes. Most of the increased loadings were from the eastern provinces. Flows of unprocessed products remained level, at 16.7 million tonnes. Forest products in total accounted for 14.5 per cent of annual rail tonnage.

### ORES AND MINE PRODUCTS

Iron ore flows rebounded to 1998 levels with a total of 39 million tonnes loaded. Other ores and mine product traffic continued to grow to its highest level in over a decade, up seven per cent from 1999 to 24.5 million tonnes. In this group, alumina accounted for about five million tonnes loaded. Building materials (sand, gravel, crushed stone, and cement) and nickel, lead and zinc ores and concentrates together accounted for another 10 million tonnes.

The ores and mine products group made up 23 per cent of total rail traffic loaded in 2000, compared with 21 per cent the previous year.

### FERTILIZERS AND FERTILIZER MATERIALS

Potash made up 52 per cent of this category, with 14.2 million tonnes loaded in 2000. This traffic level was up seven per cent from last year. Sulphur loadings reached 7.5 million tonnes, comparable with 1999.

The pattern of phosphate rock shipments established last year continued. Since a domestic source was discovered, use of imported material dropped off and 0.5 million tonnes were shipped from Ontario westward by rail in 2000.

Fertilizers and fertilizer materials accounted for 27.2 million tonnes in aggregate, 10 per cent of total traffic loaded in 2000.

### COAL

Coke and coal shipments were down from 43.3 million tonnes in 1999 to 40.6 million tonnes in 2000, closer to 1998 levels. The drop in traffic may have been partly attributable to the August 2000 closure of the Quintette coal mine in Tumbler Ridge, British Columbia, due to falling coal prices.

Coal accounted for 14.5 per cent of total loadings.

1 Preliminary data.



## INDUSTRIAL PRODUCTS

Metals, autos and parts, refined petroleum products and chemicals accounted for 14.5 per cent of traffic loaded in 2000.

Metals and automotive traffic remained comparable with 1999 levels, with loadings reaching 9.3 and 5.0 million tonnes, respectively. Petroleum product traffic grew four per cent to 11.4 million tonnes, and chemical traffic rose eight per cent to 14.5 million tonnes.

## INTERMODAL

Although the intermodal sector did not post the exceptional growth experienced in 1999, it did grow by over 10 per cent in 2000 to reach 26.1 million tonnes. Container-on-flat-car traffic increased 10 per cent to 24.4 million tonnes, and trailer-on-flat-car traffic increased eight per cent to 1.6 million tonnes. Slightly more loadings occurred in eastern Canada than in the west.

Intermodal traffic accounted for 9.4 per cent of total loadings in 2000.

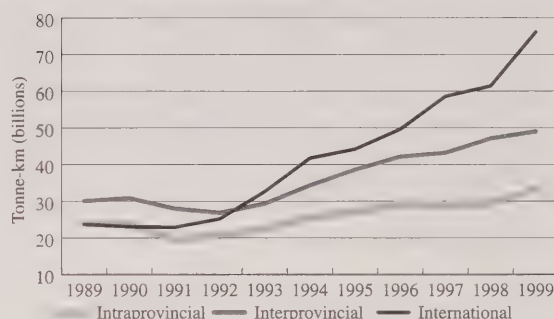
# TRUCKING TRANSPORTATION

## DOMESTIC VERSUS INTERNATIONAL TRAFFIC

From 1989 to 1999, international for-hire trucking traffic soared from 24 billion to 76 billion tonne-kilometres, accounting for an average annual increase of 12.4 per cent. Domestic trucking traffic grew at a more modest rate of 4.2 per cent over the same period, from 54 billion to 82 billion tonne-kilometres. In both sectors, growth was more vigorous after the 1990 – 1992 recession period. Figure 12-3 illustrates the growth in annual truck traffic in tonne-kilometres between 1989 and 1999.

Given these increases over the last decade, the relative importance of domestic and international markets in the total traffic of Canadian-based for-hire trucking firms has changed. The international market, which represented 30 per cent of the total tonne-kilometres moved in 1989, jumped to a 48 per cent share in 1999, while the domestic market share declined.<sup>2</sup>

**FIGURE 12-3: TOTAL TRUCK TRAFFIC, ANNUAL TONNE-KILOMETRES, 1989 – 1999**



Source: Statistics Canada, *Trucking in Canada*, Cat. 53-222; Transport Canada

In 1999, Ontario dominated in terms of tonne-kilometres hauled by Canadian-based for-hire carriers. It captured 38 per cent of total intraprovincial traffic, 33 per cent of traffic moved to other provinces, and 46 per cent of total international traffic. Of the 159 billion tonne-kilometres hauled by Canadian truckers in 1999, over 64 billion involved Ontario.

Table 12-3 shows the distribution of for-hire trucking traffic by sector and province for 1999. Table 12-4 indicates the main northbound and southbound traffic flows moved internationally by Canadian-based for-hire carriers. Deliveries to and from the US central states accounted for the largest share of traffic with 28 billion tonne-kilometres, or 37 per cent of total tonne-kilometres.

**TABLE 12-3: FOR-HIRE TRUCK TRAFFIC BY SECTOR AND PROVINCE, 1999**

	(Billions of tonne-kilometres)			Total	Per cent share
	Intra-provincial	Inter-provincial	Inter-national		
Ontario	12.81	16.27	35.16	64.23	40.5
Quebec	6.73	9.58	18.02	34.33	21.6
Alberta	5.52	8.67	6.98	21.17	13.3
Manitoba, Saskatchewan and territories	2.47	5.76	4.68	12.92	8.1
British Columbia	4.07	4.71	6.67	15.45	9.7
Atlantic provinces	1.88	4.02	4.67	10.56	6.7
<b>Total</b>	<b>33.47</b>	<b>49.00</b>	<b>76.18</b>	<b>158.66</b>	<b>100.0</b>

Notes: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers; "International" includes exports and imports; "Inter-provincial" are loadings based; "Territories" include Yukon, Nunavut and Northwest Territories.

Source: Statistics Canada, special tabulation

2 The declining domestic share of total trucking tonne-kilometres is not as dramatic as indicated. Domestic traffic moved by Canadian-based trucking firms is underestimated, as small for-hire (earning annual revenues between \$30,000 and \$1 million), private and owner-operator activities are only partly accounted for in Statistics Canada's *For-Hire Trucking (Commodity Origin/Destination) Survey*.

**TABLE 12-4: INTERNATIONAL FOR-HIRE TRUCK TRAFFIC BY MAJOR FLOWS AND PROVINCE, 1999**

(Billions of tonne-kilometres)

Province	US Region <sup>1</sup>	Southbound movements "Exports"	Northbound movements "Imports"	Total	Per cent Share
Ontario	US Central	8.79	7.76	16.55	21.7
Ontario	US South	4.71	4.90	9.60	12.6
Quebec	US North East	3.81	1.74	5.55	7.3
Quebec	US South	3.02	2.50	5.51	7.2
Quebec	US Central	3.32	1.78	5.10	6.7
Ontario	US North East	2.71	2.20	4.91	6.4
Prairie prov.	US Central	2.59	2.05	4.64	6.1
Ontario	US West	1.87	2.07	3.94	5.2
British Columbia	US West	2.07	1.42	3.49	4.6
Prairie provinces	US West	1.86	1.35	3.21	4.2
<b>Sub-total</b>		<b>34.74</b>	<b>27.76</b>	<b>62.50</b>	<b>82.0</b>
Other Movements		8.34	5.35	13.69	18.0
<b>Total</b>		<b>43.07</b>	<b>33.11</b>	<b>76.18</b>	<b>100.0</b>

Note: Totals may not add due to rounding; Canadian-domiciled for-hire Class I and II carriers.

<sup>1</sup> US North East includes New England and Middle Atlantic states.

US Central includes states bordering the Great Lakes and other central states such as North Dakota, South Dakota, Nebraska, Iowa, Kansas and Missouri.

US West includes Pacific states and Western Mountain states.

Source: Transport Canada, adapted from Statistics Canada, special tabulations

## TRUCK TRAFFIC BY COMMODITY

In terms of volume carried, total truck traffic in 1999 amounted to 158.7 billion tonne-kilometres. Of this, 52 per cent, or 82.5 billion tonne-kilometres, were moved domestically and 48 per cent, or 76.2 billion tonne-kilometres, were hauled internationally. Five commodity groupings represented over 75 per cent of all tonnage carried. Forest products led the group with 20 per cent of total tonne-kilometres, followed by food products at 19 per cent, miscellaneous products (or end-products) at 18 per cent, and manufactured products and steel/alloy products at 10 per cent each.

On the domestic front, food products represented 13.3 billion tonne-kilometres, or 27 per cent of total interprovincial tonne-kilometres. Miscellaneous products ranked second with a 21 per cent share. While interprovincial traffic totalled 49 billion tonne-kilometres in 1999, intraprovincial shipments totalled 33.5 billion tonne-kilometres. Forest products led intraprovincial traffic with 27 per cent of tonne-kilometres moved, followed by petroleum products with 14 per cent, and food products with 13 per cent.

In 1999, Canadian-based carriers moved 42.8 billion tonne-kilometres of exports, or 57 per cent of total international trucking traffic. Forest products were the main exported commodity group, with 27 per cent of total trucking exports, followed by miscellaneous products and manufactured products. On the import side, miscellaneous products and food products dominated, with 21 per cent and 19 per cent, respectively. In total,

Canadian-based trucking carriers shipped nearly 33.1 billion tonne-kilometres northbound in 1999.

Domestic and international traffic generated \$7 billion and \$6.1 billion in transportation revenues, respectively. The same five commodity groups that dominated tonne-kilometres moved also dominated trucking revenues, with 73 per cent of the total. Miscellaneous products ranked first, generating \$2.4 billion, or 18 per cent of total revenues, followed mainly by food products, with \$2.2 billion, and forest products, with \$1.9 billion.

Table 12-5 shows the volume of for-hire trucking traffic by major commodity group in 1999. Table 12-6 indicates the revenues of for-hire trucking activity by sector and major commodity group for the same year.

**TABLE 12-5: FOR-HIRE TRUCKING TRAFFIC BY COMMODITY GROUP, 1999**

(Billions of tonne-kilometres)

SCTG Commodities <sup>1</sup>	Domestic	International	Total	Per cent of total
Forest products	16.34	15.34	31.68	20.0
Food products	17.79	12.25	30.04	18.9
Miscellaneous products	14.29	13.84	28.13	17.7
Other manufactured	7.01	9.40	16.41	10.3
Steel and alloys	8.11	8.23	16.34	10.3
Automotive products	1.88	6.84	8.72	5.5
Chemical products	4.63	3.77	8.40	5.3
Petroleum products	6.17	0.61	6.79	4.3
Machinery and equipment	2.40	3.92	6.32	4.0
Ores and non-metallic minerals	3.86	1.97	5.83	3.7
<b>Total All Commodities</b>	<b>82.47</b>	<b>76.18</b>	<b>158.66</b>	<b>100.0</b>

<sup>1</sup> Standard Classification of Transported Goods (SCTG) introduced in 1999 for-hire trucking traffic data.

Source: Transport Canada, adapted from Statistics Canada, special tabulation (For-Hire Trucking Commodity Origin/Destination Survey)

**TABLE 12-6: FOR-HIRE TRUCKING ACTIVITY REVENUES BY COMMODITY GROUP, 1999**

(Millions of dollars)

SCTG Commodities <sup>1</sup>	Domestic	International	Total	Per cent of total
Forest products	929.1	930.5	1,859.6	14.2
Food products	1,366.6	799.8	2,166.3	16.5
Miscellaneous products	1,386.8	995.2	2,382.0	18.2
Other manufactured products	832.5	976.6	1,809.1	13.8
Steel and alloys products	643.3	661.9	1,305.2	10.0
Automotive products	415.5	810.9	1,226.4	9.4
Chemical products	408.2	299.7	708.0	5.4
Petroleum products	373.8	48.8	422.6	3.2
Machinery and equipment	407.0	530.7	937.7	7.2
Ores and non-metallic minerals	193.8	93.5	287.3	2.2
<b>Total All Commodities</b>	<b>6,956.7</b>	<b>6,147.4</b>	<b>13,104.1</b>	<b>100.0</b>

<sup>1</sup> Standard Classification of Transported Goods (SCTG) introduced in 1999 for-hire trucking traffic data.

Source: Transport Canada, adapted from Statistics Canada, special tabulation (For-Hire Trucking Commodity Origin/Destination Survey)

## TRUCK FLEET

Class 8 heavy trucks include those vehicles with a gross vehicle weight of 15,000 kilograms or more. These are typically tractor-trailer combinations with the "18-wheeler" being the most common configuration. Over 270,000 Class 8 trucks were registered across the country in 2000, an increase of about three per cent over 1999. As shown in Table 12-7, Ontario accounted for the most Class 8 trucks at just over 100,000, followed by Alberta with 65,000 and Quebec with 32,000. Nearly three-quarters of the Class 8 registrations were accounted for by these three provinces.

The lighter heavy trucks category with gross weights between 4,500 and 15,000 kilograms contains most of the straight trucks (i.e. the power unit and the cargo space are a single unit) in the country, including most dump trucks, cube vans, and other large delivery trucks. Over 390,000 trucks of this type were registered in 2000, an increase of about one per cent over 1999. Alberta had the single largest number of light heavy trucks at 110,000, followed by Ontario with 80,000 and British Columbia with over 60,000. Nearly two-thirds of the light heavy total was accounted for by these three provinces.

Taken together, over 660,000 heavy trucks were registered in 2000, nearly four per cent of the total number of registered vehicles. Ontario, with over 180,000 heavy trucks, accounted for the largest share at nearly 28 per cent followed by Alberta with 175,000 trucks and Quebec with 83,000.

## TRUCK SALES

While sales of new Class 8 truck in 2000 were 10 per cent lower than the record levels enjoyed in 1999, the 27,905 trucks sold did make 2000 the third highest sales year in the past 10 years. As shown in Table 12-8, sales figures were down in almost every province except Alberta and British Columbia, where a gain of approximately 15 per cent was made, and for Prince Edward Island, where sales were nearly the same as last year.

**TABLE 12-8: SALE OF CLASS 8 TRUCKS BY PROVINCE, 1998 TO 2000**

	1998 Sales	Per cent of total	1999 Sales	Per cent of total	2000 Sales	Per cent of total
Newfoundland	129	0.4	150	0.5	110	0.4
Prince Edward Island	46	0.2	45	0.1	46	0.2
Nova Scotia	560	1.9	632	2.0	543	1.9
New Brunswick	1,282	4.4	1,437	4.6	1,142	4.1
Quebec	5,682	19.5	6,782	21.9	5,749	20.6
Ontario	11,947	41.1	13,124	42.4	11,163	40.0
Manitoba	1,615	5.6	1,674	5.4	1,224	4.4
Saskatchewan	1,168	4.0	1,107	3.6	1,024	3.7
Alberta	4,402	15.1	3,814	12.3	4,345	15.6
British Columbia	2,265	7.8	2,219	7.2	2,559	9.2
<b>Canada</b>	<b>29,096</b>	<b>100.0</b>	<b>30,984</b>	<b>100.0</b>	<b>27,905</b>	<b>100.0</b>

Source: Canadian Vehicle Manufacturers' Association

Overall, approximately 3,000 fewer trucks were sold in 2000 compared with 1999. Sales of Class 8 trucks in the United States closed the year with four months of steep declines, finishing 19.4 per cent below 1999's record of 262,316 trucks sold. All the major truck manufacturers reported downturns in sales, and the trend seems likely to carry into 2001.

**TABLE 12-7: REGISTERED CLASS 8 TRUCKS AND HEAVY VEHICLES BY PROVINCE/TERRITORY, 2000**

	Light heavy trucks <sup>1</sup>	Per cent	Class 8 trucks	Per cent	Total heavy trucks	Per cent	Heavy trucks as a share of all registered vehicles	Total registered vehicles
Newfoundland	4,068	1.0	2,859	1.1	6,927	1.0	2.8	250,953
Prince Edward Island	2,060	0.5	2,576	1.0	4,636	0.7	6.0	77,300
Nova Scotia	9,984	2.6	7,396	2.7	17,380	2.6	3.3	532,265
New Brunswick	10,143	2.6	4,401	1.6	14,544	2.2	3.2	448,440
Quebec	51,491	13.2	32,437	12.0	83,928	12.7	2.1	3,935,526
Ontario	80,226	20.5	103,494	38.3	183,720	27.8	2.8	6,554,988
Manitoba	9,877	2.5	10,975	4.1	20,852	3.2	3.4	608,121
Saskatchewan	50,683	13.0	25,107	9.3	75,790	11.5	10.8	699,615
Alberta	110,186	28.2	65,056	24.1	175,242	26.5	8.3	2,113,644
British Columbia	60,523	15.5	14,038	5.2	74,561	11.3	3.2	2,304,610
Yukon	1,217	0.3	890	0.3	2,107	0.3	9.0	23,487
Northwest Territories	569	0.1	793	0.3	1,362	0.2	7.1	19,287
Nunavut	250	0.1	121	0.0	371	0.1	13.7	2,712
<b>Total</b>	<b>391,277</b>	<b>100.0</b>	<b>270,143</b>	<b>100.0</b>	<b>661,420</b>	<b>100.0</b>	<b>3.8</b>	<b>17,570,948</b>

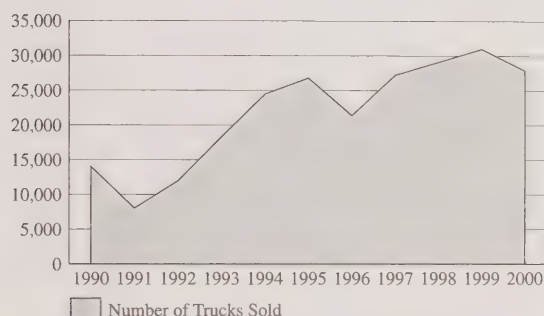
1 Vehicles with a gross weight between 4.5 tonnes and 15 tonnes.

Source: Provincial/territorial files submitted to Statistics Canada for the Canadian Vehicle Survey



Sales of new Class 8 trucks are quite cyclical, as illustrated by Figure 12-4. The new Class 8 trucks sold every year are either for addition to a fleet or for replacement. In a period of growth, additions can be more important than replacements. In a period of downturn, however, even fleet replacements can be affected by the postponement of the decision to buy, or by the purchase of used trucks, which are newer than the ones in the fleet, from those pulling out of the industry.

**FIGURE 12-4: ANNUAL SALES OF CLASS 8 TRUCKS IN CANADA, 1990 – 2000**



Source: Canadian Vehicle Manufacturers' Association

When Canadian sales of Class 8 trucks in a given year are related to the number of registered Class 8 trucks, it gives an idea of the importance of the replacement rate of vehicles in the trucking industry (Table 12-8). Replacement rates vary from one region to another, a situation that would have to be analyzed at a micro-level to determine whether or not it is indicative of an appropriate or inappropriate rate of replacement. In Canada as a whole, more than 10 per cent of registered Class 8 trucks in operation in 1999 were new trucks.

Table 12-9 shows the replacement rate of Class 8 trucks by province/territory in 2000.

**TABLE 12-9: REPLACEMENT OF CLASS 8 TRUCKS BY PROVINCE/TERRITORY, 2000**

	Sales of Class 8	Registered Class 8	Sales/Registration (Per cent)
Newfoundland	110	2,859	3.8
Prince Edward Island	46	2,576	1.8
Nova Scotia	543	7,396	7.3
New Brunswick	1,142	4,401	25.9
Quebec	5,749	32,437	17.7
Ontario	11,163	103,494	10.8
Manitoba	1,224	10,975	11.2
Saskatchewan	1,024	25,107	4.1
Alberta	4,345	65,056	6.7
British Columbia	2,559	14,038	18.2
<b>Canada</b>	<b>27,905</b>	<b>268,339</b>	<b>10.4</b>

Source: Provincial/Territorial Registration Files submitted to Statistics Canada for the Canadian Vehicle Survey; Canadian Vehicle Manufacturers' Association

## MARINE TRANSPORTATION

Marine freight traffic in Canada has three categories: domestic flows,<sup>3</sup> transborder trade with the United States, and "other" international (deep-sea or overseas) traffic.<sup>4</sup> Marine freight traffic totalled 334 million tonnes<sup>5</sup> in 1999, a 1.9 per cent increase from 1998. Domestic flows, or coasting trade, accounted for 52.9 million tonnes, 9.5 per cent more than the 48.3 million tonnes moved in 1998. Canadian-flag vessels carried 51.5 million tonnes, or 97 per cent, of this total, which left foreign ships handling just three per cent of Canada's domestic marine shipping activities in 1999.

Canada-US traffic totalled 101.9 million tonnes, a 1.8 per cent increase over 1998 volumes. Canadian-flag vessels were active in the transborder trade, carrying 56.2 million tonnes, or 55.2 per cent of the total traffic. Overseas traffic decreased by 0.1 per cent in 1999 to 179.2 million tonnes, with Canadian-flag vessels carrying only 0.1 per cent of this traffic.

Total marine flows between 1989 and 1999 fluctuated year to year but showed a slightly increasing trend overall. Domestic traffic flows declined from a high of 70 million tonnes in 1988 to 52.9 million tonnes in 1999, a 24 per cent decline. This decline was primarily due to a shift in grain traffic from Thunder Bay to West Coast ports. In 1999, transborder traffic between Canada and the United States exceeded the previous high recorded in 1998 by almost two per cent. Since 1988, transborder tonnage increased by 22 per cent. Overseas (other international) traffic grew eight per cent between 1988 and 1999. Overseas volumes were 0.1 per cent lower in 1999 than in 1998.

3 Maritime traffic that originates from and is destined to a Canadian port; flows count traffic volume only once, in contrast to port loadings and unloadings, for which, in the case of domestic traffic, the same volumes get counted twice.

4 Traffic to and from foreign countries other than the United States.

5 Based on traffic flows rather than tonnage handled at Canadian ports (domestic volumes are not double counted).



Table 12-10 shows trends in Canada's marine traffic, by sector, from 1986 to 1999, while Table 12-11 shows the Canadian flag share of Canadian waterborne trade in 1999.

**TABLE 12-10: CANADA'S MARINE TRAFFIC STATISTICS BY SECTOR, 1986 – 1999**

	(Millions of tonnes)			Total Flows	Total Handled
	Domestic Flows	Transborder	Overseas		
1986	60.5	68.2	138.4	267.1	327.6
1987	67.6	73.2	153.8	294.6	362.2
1988	70.0	83.8	166.2	320.0	390.0
1989	62.0	82.7	156.7	301.4	363.4
1990	60.4	76.2	156.1	292.7	353.1
1991	57.9	67.0	167.2	292.1	350.0
1992	52.3	67.9	155.3	275.5	327.8
1993	50.4	69.9	154.2	274.5	324.9
1994	52.2	78.8	168.1	299.1	351.3
1995	50.4	85.2	174.5	310.1	360.5
1996	48.8	88.5	171.4	308.7	357.5
1997	46.7	94.3	188.4	329.4	376.1
1998	48.3	100.1	179.4	327.8	376.1
1999	52.9	101.9	179.2	334.0	386.9

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

**TABLE 12-11: CANADIAN FLAG SHARE OF CANADIAN WATERBORNE TRADE, 1999**

Canadian Waterborne Trade	(Millions of tonnes)						Total Traffic
	Canadian Flag	Per cent	US Flag	Per cent	Foreign Flag	Per cent	
Domestic	51.5	97.4	0.0	0.0	1.3	2.5	52.9
Canada/US	56.2	55.2	8.3	8.1	37.4	36.7	101.9
Deep-Sea	0.3	0.1	0.1	0.1	178.8	99.8	179.2
<b>Total</b>	<b>108.0</b>	<b>32.3</b>	<b>8.4</b>	<b>2.5</b>	<b>217.5</b>	<b>65.1</b>	<b>334.0</b>

Source: Statistics Canada and Transport Canada

## DOMESTIC FREIGHT TRAFFIC

Domestic cargo is loaded and unloaded at Canadian ports and therefore handled twice by the port system. Domestic cargo rose 9.5 per cent in 1999 to 105.8 million tonnes. A significant decline in woodpulp and canola shipments was offset by increased shipments of crude petroleum, pulpwood, logs, bolts, and stone and limestone. Domestic marine cargo has been steadily decreasing since its peak in 1988, when ports handled 139.9 million tonnes. This was due in part to a change in the direction of Canada's international trade. Throughout the 1980s, many commodities were carried as domestic cargo via the Great Lakes–St. Lawrence Seaway system and then transferred at Canada's eastern ports for shipment overseas. More and more, these commodities are now being carried by rail to Canada's western ports for shipment overseas.

Table 12-12 shows flows of domestic marine traffic by region in 1999.

**TABLE 12-12: MARINE DOMESTIC FLOWS BY CANADIAN REGION, 1999**

Region of Origin (Loadings)	(Thousands of tonnes)				All Regions
	----- Region of Destination (Unloadings) -----				
	Atlantic	St. Lawrence	Great Lakes	Pacific	
Atlantic	7,356	2,253	456	0	10,065
St. Lawrence	1,023	6,426	6,533	0	13,982
Great Lakes	327	5,329	8,439	0	14,095
Pacific	52	0	0	14,725	14,777
All Regions	8,758	14,008	15,428	14,725	52,919

Source: Statistics Canada, Shipping in Canada, Cat. 54-205

Most domestic traffic is centred in the Great Lakes–St. Lawrence Seaway system. These ports handled 57.5 million tonnes (loadings and unloadings) in 1999, or 54.3 per cent of the total domestic tonnage. The Pacific region was the second busiest, handling 29.5 million tonnes, or 27.9 per cent of the total. The bulk of domestic cargo handled by Pacific ports (99.7 per cent) stayed within that region. Pacific coast ports handled 4.8 million tonnes more cargo in 1999 than in 1998. Atlantic region ports handled 18.8 million tonnes of domestic cargo in 1999, or 41 per cent more than in 1998. Crude petroleum shipments to the shore-based storage reservoir at Whiffenhead, Newfoundland, drove this increase as the oil field on the Grand Banks (Hibernia) increased its production.

## COASTING TRADE ACT

The *Coasting Trade Act* of 1992 governs foreign-registered ship activity in Canada's domestic marine shipping. Under the Act, only Canadian-registered, duty-paid ships may transport passengers and cargoes, and conduct commercial marine-related activities in Canadian waters. In addition, only Canadian-registered, duty-paid ships may be involved in the exploration and exploitation of non-living natural resources on Canada's continental shelf. Waivers are granted to foreign-registered ships to enter Canada's coasting trade if no Canadian ship is available or capable of providing a particular service. Canada Customs and Revenue Agency, through its regional custom's offices, carries out the administration and collection of duties associated with obtaining a coasting trade licence. While involved in a coasting trade activity, a foreign ship is subject to duty, payable per month at the rate of 1/120th of 25 per cent of the declared fair market value of the foreign ship. In one exception, as of January 1998, in accordance with the Canada–US Free Trade Agreement, duty is not payable on US-registered ships. The Canadian Transportation Agency determines whether or not a Canadian-registered, duty-paid ship is available to perform a particular service. Enforcing the Act remains the responsibility of the Minister of Transport.

The most significant contributors to the increase in domestic traffic within Canada were petroleum products, with 22.0 per cent of the volume, and stone and limestone, with 22.4 per cent.

In 1999, the primary commodities handled in the domestic trade across Canada were:

- iron ore and concentrates (14.2 million tonnes, up 1.5 per cent from 1998)
- pulpwood and chips (14.1 million tonnes, up 13.9 per cent)
- fuel oil (9.9 million tonnes, up 1.7 per cent)
- stone and limestone (11.3 million tonnes, up 22.4 per cent)
- wheat (9.0 million tonnes, up 0.4 per cent)
- crude petroleum (5.8 million tonnes, up 169 per cent).

Together, these commodities accounted for 60.1 per cent of all domestic tonnage handled at Canadian ports in 1999.

In 1999, nearly 2.6 per cent of Canada's domestic marine traffic was handled by foreign-flag ships, up from 2.1 per cent in 1998.

Historically, foreign-flag vessels have accounted for less than two per cent of the total domestic traffic. During 2000, the Canada Customs and Revenue Agency received a total of 110 applications for a coasting trade licence, down slightly from the 117 received in 1999. Of these, four were denied, while another seven were withdrawn by the applicant. US-flagged ships made up the greatest proportion of the applications with 35.

In 2000, offshore oil and gas production and exploration remained an area of high activity, particularly on the East Coast. As in the previous year, there were a significant number of coasting trade applications related to this activity, including 26 for the use of foreign-registered tankers and 11 for seismic research. Applications for tug and barge combinations were next at 20, followed by passenger vessels, including cruises, at 14.

Table 12-13 indicates the actual tonnage and percentage of total cargo tonnage carried by foreign-registered ships involved in Canadian domestic shipping from 1988 to 1999.

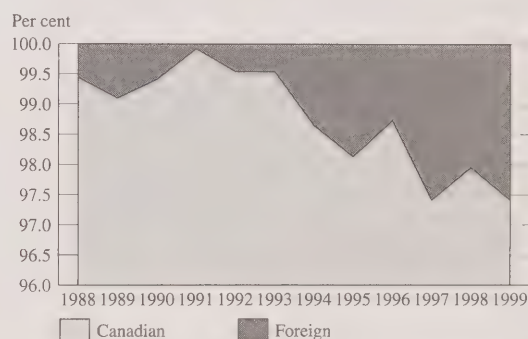
Figure 12-5 indicates the percentage of total cargo carried by foreign-registered ships involved in Canadian domestic shipping from 1988 to 1999.

**TABLE 12-13: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN THE CANADIAN COASTING TRADE, 1988 - 1999**

Year	Canadian	Per cent	Foreign	Per cent	Total
1988	69,584,300	99.44	389,200	0.56	69,973,500
1989	61,455,700	99.10	560,100	0.90	62,015,800
1990	60,005,700	99.41	354,300	0.59	60,360,000
1991	57,862,300	99.92	48,400	0.08	57,910,700
1992	52,021,600	99.54	240,200	0.46	52,261,800
1993	49,744,300	99.54	231,300	0.46	49,975,600
1994	51,474,100	98.65	703,800	1.35	52,177,900
1995	49,552,400	98.13	945,400	1.87	50,497,800
1996	48,377,762	98.73	623,384	1.27	49,001,146
1997	45,431,820	97.41	1,208,017	2.59	46,639,837
1998	47,301,104	97.93	998,994	2.07	48,300,098
1999	51,549,488	97.41	1,369,314	2.59	52,918,802

Source: Transport Canada, from data supplied by Statistics Canada

**FIGURE 12-5: SHARE OF TONNAGE CARRIED BY FOREIGN-FLAG SHIPS IN CANADIAN COASTING TRADE, 1988 - 1999**



Source: Transport Canada, from data supplied by Statistics Canada

## INTERNATIONAL FREIGHT TRAFFIC

In 1999, the volume of international cargo handled was 281.1 million tonnes, up 0.6 per cent from the quantity handled during 1998. Of all the international tonnage handled at Canadian ports, 63.9 per cent is export-oriented (including in-transit and re-export traffic). Canada's main deep-sea trading partners, excluding the United States, include Japan, China, South Korea, the United Kingdom and other western European nations. Combined, they accounted for over 61 per cent of total Canadian international marine traffic (exports and imports) in 1999.

The value of Canadian international marine trade in 1999 was around \$83 billion (excluding shipments via US ports), or 4.5 per cent higher than in 1998. Marine imports were valued at \$42.8 billion and exports at \$40.2 billion. While the value of exports decreased by one per cent, imports increased by 10.3 per cent, due to increased cargoes inbound from western Europe and Asia.

Table 12-14 shows the value of the marine share of Canada's international trade in 1999.

**TABLE 12-14: VALUE OF MARINE SHARE OF CANADIAN INTERNATIONAL TRADE, 1999**

(Billions of dollars)

	Marine	All Modes	Marine (Per cent)
Transborder			
Exports <sup>1</sup>	6.9	308.1	2.2
Imports	2.8	215.4	1.3
Total US	9.8	523.5	1.9
Other Countries			
Exports <sup>1</sup>	33.2	46.8	70.9
Imports	40.0	104.7	38.2
Total other	73.2	151.5	48.3

<sup>1</sup> Including domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; Special tabulations

## CONFERENCE/NON-CONFERENCE MARKET SHARES

If it offers scheduled liner services, a shipping line can operate either as a member line of a shipping conference or as an independent (non-conference) line. Non-conference traffic has grown consistently in recent years, both in absolute terms and as a percentage of total liner traffic. As shown in Table 12-15, conference traffic was relatively static from 1994 to 1997, but was down somewhat in 1998. The Asia North America Eastbound Rate Agreement (ANERA) dissolved late in 1996. Several other conferences have been dissolved during 1999, including the Canada Westbound Rate Agreement (see Chapter 11 for further detail). The decline in conference power on many routes has resulted in independent lines increasing their market share substantially, particularly from 1998 on. If non-conference US origin/destination transshipped traffic is taken into account, the non-conference share would be even more dominant.<sup>6</sup>

**TABLE 12-15: CONFERENCE/NON-CONFERENCE SHARES OF CANADIAN LINER TRADE, 1994 - 1999**

(Millions of tonnes)

	1994	1995	1996	1997	1998	1999
Conference						
Exports	5.6	5.6	5.9	5.9	5.4	3.8
Imports	5.0	4.4	4.7	4.3	4.3	4.3
Total	10.6	10.0	10.6	10.2	9.7	8.1
Non-conference						
Exports	5.3	6.5	6.8	6.5	8.2	11.4
Imports	3.6	3.6	3.7	5.3	6.6	6.9
Total	8.9	10.0	10.5	11.8	14.8	18.3

Source: Statistics Canada, International Database; Transport Canada

<sup>6</sup> It is important to note that the data in Tables 12-15 and 12-16 are not adjusted for US transshipments moving through Canadian ports. Much of this traffic moves on conference vessels but at non-conference rates. The route that is likely most affected is that between Europe and Canada. The Port of Montreal estimates that around 50 per cent of its liner traffic originates in, or is destined for, the US. The Port of Halifax is also handling growing amounts of US Midwest traffic. This would, of course, affect the balance between conference/non-conference traffic further in favour of independent operators.

<sup>7</sup> Including in-transit and transshipment cargo.

As shown in Table 12-16, liner traffic by foreign region of origin/destination helps illustrate the relative shares of conference and non-conference operators on different routes. The drop in conference traffic in 1999 is due largely to the weakening of conference carryings in the Asian trades.

**TABLE 12-16: LINER TRAFFIC BY REGION, 1999**

(Millions of tonnes)

Region	Liner Imports		Liner Exports		Total
	Conference	Non-conference	Conference	Non-conference	
Europe	4.1	2.5	3.8	1.6	11.9
Asia	0.2	3.1	—	7.6	10.9
Central America	—	0.2	—	0.6	0.9
South America	—	0.3	—	0.4	0.7
North America	—	0.3	—	0.5	0.8
Middle East	—	0.2	—	0.3	0.5
Oceania	—	—	—	0.2	0.3
Africa	—	0.2	—	0.1	0.4
<b>Total</b>	<b>4.3</b>	<b>6.9</b>	<b>3.8</b>	<b>11.4</b>	<b>26.4</b>

Note: — means "Nil"

Source: Statistics Canada, International Database; Transport Canada

## Marine Traffic by Commodity

As in past years, in terms of the type of cargo carried, conference operators tend to concentrate almost solely on containerized traffic, with eight million tonnes of the total of 8.1 million tonnes they carried moving in containers. Non-conference traffic is also characterized by an increasingly large percentage of cargo in containers (78 per cent), but includes significant amounts of general cargo and neo-bulk traffic as well.

## CANADA-US TRANSBORDER FREIGHT TRAFFIC

Spurred by both exports and imports, Canada's marine traffic with the United States increased by 22 per cent between 1988 and 1999. Transborder traffic reached a peak of 101.9 million tonnes in 1999, up 1.8 per cent from the year before. Exports (loadings to US destinations)<sup>7</sup> led the slight growth of 1.4 per cent in marine traffic between the two nations. Imports (unloadings) increased by 2.4 per cent to 42.2 million tonnes in 1999, compared with 41.2 million tonnes over the same period in 1998.

Table 12-17 shows Canada's maritime trade with the United States from 1986 to 1999.



**TABLE 12-17: CANADA'S MARITIME TRADE WITH THE US, 1986 – 1999**

(Millions of tonnes)

	<i>Loaded</i>	<i>Unloaded</i>	<i>Total</i>
1986	36.8	31.4	68.2
1987	39.8	33.5	73.3
1988	47.0	36.8	83.8
1989	43.4	39.3	82.7
1990	43.1	33.2	76.3
1991	36.8	30.2	67.0
1992	35.9	32.0	67.9
1993	42.1	27.8	69.9
1994	49.5	29.3	78.8
1995	49.9	35.3	85.2
1996	52.4	36.1	88.5
1997	56.9	37.4	94.3
1998	58.9	41.2	100.1
1999	59.7	42.2	101.9

Source: Statistics Canada, Cat. 54-205

Fuelled by exports of \$6.9 billion, marine traffic with the United States was valued at \$9.8 billion in 1999. This value, however, represented only two per cent of total Canada-US trade, as the majority of the traffic was handled by surface transport modes, such as trucking and rail.

See Chapter 8 "Transportation and Trade" for more detailed information on Canada's trade with the United States.

## EXPORTS

Loadings at Canadian ports destined for the United States totalled 59.7 million tonnes in 1999, up 1.4 per cent from 1998. Seven commodities accounted for 74 per cent of marine export volumes. These were (in million tonnes) crude petroleum (9.2), iron ore (8.4), gypsum (6.9), stone and limestone (6.5), fuel oil (5.4), gasoline (4.3) and salt (3.7).

In 1999, volumes of major commodities exported to the United States changed substantially from those exported in 1998. Gypsum exports jumped by 11 per cent and crude petroleum and stone and limestone increased by 6.8 and 8.6 per cent, respectively. In contrast, iron ore and salt exports decreased by 14.3 and 11.4 per cent, respectively.

There were two main trade flow corridors in 1999: the Canadian Atlantic to the US Atlantic route, with 27.5 million tonnes, or 46 per cent of total loadings to the US and from the Canadian Great Lakes to US Great Lakes ports, with 12.5 million tonnes, or 21 per cent of total loadings.

Table 12-18 details traffic flows from Canada to the United States in 1999.

**TABLE 12-18: CANADA'S MARINE TRAFFIC TO THE US, 1999**

(Millions of tonnes)

<i>Canadian Region of Origin</i>	<i>US Region of Destination</i>			<i>Total</i>
	<i>US Atlantic</i>	<i>US Great Lakes</i>	<i>US Pacific</i>	
Atlantic	27.5	0.0	0.6	28.1
St. Lawrence	4.7	5.8	0.0	10.6
Great Lakes	0.1	12.5	0.0	12.6
Pacific	0.5	0.0	8.0	8.5
<b>Total</b>	<b>32.8</b>	<b>18.3</b>	<b>8.6</b>	<b>59.7</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada

## IMPORTS

Unloadings of shipments at Canadian ports originating in the United States rose from 41.2 million tonnes in 1998 to 42.2 million tonnes in 1999, a two per cent increase. Significant commodities, in terms of volume, included (in million tonnes) coal (18.6), iron ore (6.3), stone and limestone (3.0), fuel oil (2.1), corn (1.9), other petroleum products (1.7) and soybeans (1.5). Together, these seven commodities accounted for 83 per cent of all marine imports from the United States.

As with exports, there was considerable instability in the volumes of marine imports from the United States compared with 1998 volumes. Imports of corn and coal were up 64.1 and 4.9 per cent, respectively. Fuel oil showed a 12 per cent drop. Volumes of stone/limestone and iron ore decreased by 0.2 and 0.5 per cent, respectively.

The bulk of all marine imports from the United States, 77 per cent of the total volume, originated at ports on the Great Lakes. Ports along the US Atlantic and the Gulf of Mexico accounted for 16.6 per cent, with US Pacific ports making up the remaining 6.4 per cent.

Table 12-19 shows the traffic flow from the US to Canadian ports in 1999.

**TABLE 12-19: CANADA'S MARINE TRAFFIC FROM THE US, 1999**

(Millions of tonnes)

<i>Canadian Region of Destination</i>	<i>US Region of Origin</i>			<i>Total</i>
	<i>US Atlantic</i>	<i>US Great Lakes</i>	<i>US Pacific</i>	
Atlantic	2.9	0.1	0.0	3.0
St. Lawrence	3.5	4.3	0.4	8.2
Great Lakes	0.2	28.1	0.0	28.3
Pacific	0.4	0.0	2.3	2.7
<b>Total</b>	<b>7.0</b>	<b>32.5</b>	<b>2.7</b>	<b>42.2</b>

Source: Statistics Canada, Cat. 54-205; Transport Canada



## OVERSEAS FREIGHT TRAFFIC

Canadian marine trade with overseas countries (excluding the United States) totalled 179.2 million tonnes in 1999, down 0.1 per cent from the 1998 total of 179.4 million tonnes. Over the last 10 years, this trade has been strongly export-oriented, with the loading share going back and forth between 67 and 79 per cent. The majority of total loadings to overseas countries (about 61 per cent) took place at West Coast ports, while 89 per cent of overseas imports were unloaded at Canada's East Coast ports.

Table 12-20 shows Canada's maritime overseas trade from 1986 to 1999.

**TABLE 12-20: CANADA'S MARITIME OVERSEAS TRADE, 1986 - 1999**

	(Millions of tonnes)		
	<i>Loaded</i>	<i>Unloaded</i>	<i>Total</i>
1986	107.8	30.6	138.4
1987	119.2	34.6	153.8
1988	124.1	42.1	166.2
1989	115.7	41.0	156.7
1990	116.0	40.1	156.1
1991	131.3	35.9	167.2
1992	118.0	37.3	155.3
1993	110.4	43.8	154.2
1994	120.5	47.6	168.1
1995	126.6	47.9	174.5
1996	121.9	49.5	171.4
1997	131.1	57.3	188.4
1998	120.2	59.2	179.4
1999	119.9	59.3	179.2

Source: Statistics Canada, Cat. 54-205; Transport Canada

In 1999, the Canadian marine trade with overseas countries (excluding the United States) was valued at \$73.2 billion. Of this, exports made up an estimated \$33.2 billion and imports \$40.0 billion. Marine transport accounted for 48 per cent of all overseas trade and was the dominant mode for shipping overseas freight.

For more detailed information concerning Canada's offshore trade, see Chapter 8, "Transportation and Trade."

## EXPORTS

Canadian marine loadings destined for non-US countries in 1999 generated 119.9 million tonnes of traffic, down 0.2 per cent from 1998 levels. The major commodities shipped from Canada were (in million tonnes) coal (31.7), iron ore (19.7), wheat (13.9), containerized freight (12.9), woodpulp (7.2), sulphur (5.4) and potash (4.3). Of outbound loadings, 11 per cent were containerized.

Some of the major commodities loaded in 1999 showed a significant decline over 1998. Coal shipments were down by 3.1 per cent, iron ore by 6.5 per cent, and wheat by 1.4 per cent. Containerized freight and sulphur volumes increased by 13.6 and 3.8 per cent, respectively.

Approximately 61 per cent of Canadian loadings for overseas destinations came from western Canadian ports in 1999, while ports along the St. Lawrence Seaway system handled most of the eastern share. Not surprisingly, the direction of trade was highly polarized, with the western ports dominating (69 per cent) the Asia and Oceania trade routes, and the Eastern ports handling 65 per cent of tonnage shipped to Europe.

Table 12-21 shows Canada's maritime traffic to overseas destinations in 1999.

**TABLE 12-21: CANADA'S MARINE TRAFFIC TO OVERSEAS, 1999**

	(Millions of tonnes)		
	<i>Canadian Region of Origin</i>		<i>Total</i>
<i>Foreign Region of Destination</i>	<i>Eastern ports</i>	<i>Western ports</i>	
Asia and Oceania	5.4	50.7	56.1
Europe	30.1	8.9	39.0
South and Central America	5.4	8.2	13.7
Middle East and Africa	5.6	5.6	11.2
<b>Total</b>	<b>46.6</b>	<b>73.3</b>	<b>119.9</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

## IMPORTS

Marine shipments from overseas origins unloaded at Canadian ports totalled 59.3 million tonnes in 1999, a 0.2 per cent increase over 1998. Crude petroleum<sup>8</sup> dominated imports at 28.4 million tonnes, or 48 per cent of all tonnage unloaded from offshore origins. Other major commodities unloaded included (in million tonnes) alumina and bauxite (5.2), containerized freight (9.0), iron and steel (3.2), fuel oil (1.8), coal (1.8) and gasoline (1.6). Of the inbound traffic, more than 15 per cent was containerized.

Eastern Canadian ports unloaded more than 89 per cent of inbound overseas shipments. Overseas cargo originated mainly in Europe and South and Central America.

Table 12-22 shows Canada's maritime traffic from overseas markets in 1999.

8 Including transshipment of North Sea crude petroleum

**TABLE 12-22: CANADA'S MARINE TRAFFIC FROM OVERSEAS, 1999**

(Millions of tonnes)

<i>Foreign Region of Origin</i>	<i>Canadian Region of Destination</i>		<i>Total</i>
	<i>Eastern ports</i>	<i>Western ports</i>	
Asia and Oceania	3.8	4.5	8.3
Europe	25.5	0.2	25.7
South and Central America	11.8	1.1	12.9
Middle East and Africa	11.7	0.8	12.5
<b>Total</b>	<b>52.8</b>	<b>6.5</b>	<b>59.3</b>

Note: Table may not add up due to rounding.

Source: Statistics Canada, Cat. 54-205; Transport Canada

## AIR TRANSPORTATION

### AIR CARGO

The domestic transportation of cargo by air is deregulated, with no restrictions on routing, capacity or price. Air cargo is carried in the belly-hold of passenger aircraft, on combination passenger/cargo aircraft and on dedicated cargo aircraft. Transborder and international air cargo services are offered within a framework of bilateral air agreements, international agreements and national policies. Canada acquires the international rights for scheduled all-cargo air services through bilateral negotiations, and it is the Minister of Transport's prerogative to designate which Canadian operators will exercise those rights. Although no Canadian carriers are exercising such all-cargo rights at this time, Air Canada operates three so-called "combi" aircraft in which a part of the passenger deck is dedicated to cargo, providing service to Europe.

Canada's policies governing international all-cargo charter air services and the designation of Canadian air carriers for scheduled international all-cargo air services were most recently modified in 1998.

The integration of Air Canada's and Canadian Airlines International's schedules in 2000 resulted in a reduction in scheduled cargo capacity, causing some difficulties for specialized cargo shippers. This is because the airlines provide air cargo service mainly as a by-product of its passenger air services, using the portion of the belly-hold not required for passenger baggage. Air Canada's cargo revenue in 2000 made up only six per cent of its total revenue.

There are 33 air carriers licensed by the Canadian Transportation Agency to operate domestic service

all-cargo aircraft. While the majority of these carriers operate with smaller, non-jet equipment, a small number of them have significant domestic and international all-cargo operations.<sup>9</sup> Canadian air carriers use their all-cargo licences to carry cargo for domestic and international courier companies, freight forwarders and consolidators, and to serve directly shippers.

Air NorTerra, which operates as Canadian North, and First Air frequently use combi aircraft to move significant amounts of air cargo northbound, including perishable goods, as part of their scheduled services. These large jet operators, along with numerous smaller operators, provide a vital transportation service in the North, where year-round alternative means of transportation is often unavailable. Preliminary data for cargo activity in the North indicate that large jet operators carried seven per cent less domestic cargo in 1999 compared with 1998. There are no data available on regional and local cargo carrier activity, as they are not required to file cargo data.

### DOMESTIC SERVICES

On February 17, 2000, the federal government introduced Bill C-26 in response to the restructuring of Canada's airline industry. Under amendments made in Bill C-26, the Canadian Transportation Agency was given authority to review cargo rates on monopoly routes. (The Agency has similar authority over passenger fares. See Chapter 13 "Passenger Transportation" for details.)

Table 12-23 shows the volume of goods carried by Canadian air carriers on all-cargo air services, by sector, from 1993 to 1999. There was little change in the total tonnes of air cargo carried between 1998 and 1999. Domestic tonnes carried increased by three per cent to 501,000 tonnes, accounting for 61 per cent of the total

**TABLE 12-23: GOODS CARRIED BY CANADIAN AIR CARRIERS BY SECTOR, 1993 - 1999**

(Tonnes)

<i>Year</i>	<i>Domestic</i>	<i>Transborder</i>	<i>Other International</i>	<i>Total</i>
1993	422,147	68,238	163,108	653,493
1994	443,601	70,882	169,102	683,585
1995	416,171	87,663	183,743	687,577
1996	447,313	80,389	195,584	723,286
1997	513,719	77,387	222,452	813,558
1998	487,583	94,176	233,952	815,711
1999 <sup>1</sup>	501,284	90,584	234,547	826,415

Note: For 1995 to 1999, Levels I-III carriers; for 1993 and 1994, Levels I-IV carriers.  
1 Preliminary data for 1999.

Source: Statistics Canada, Cat. 51-206

9 Canadian carriers that have a significant all-cargo operation with large aircraft include: All Canada Express Ltd., Bradley Air Services Limited, ICC International Cargo Charters Canada Ltd., Kelowna Flightcraft Charter Ltd., Morningstar Air Express Inc., Royal Aviation Inc. and Winport Logistics Ltd.

tonnes carried in 1999. During the same period, transborder air cargo tonnage decreased by four per cent, while international tonnes did not change significantly.

Table 12-24 shows the operating revenues generated by goods carried on Canadian air carriers on all-cargo services, by sector, from 1993 to 1999. Total cargo operating revenues increased by four per cent between 1998 and 1999. Domestic revenues increased by six per cent, to \$806 million, in 1999, accounting for 70 per cent of total cargo operating revenues, while international revenues (including transborder) increased by one per cent.

**TABLE 12-24: OPERATING GOODS REVENUES OF CANADIAN AIR CARRIERS BY SECTOR, 1993 – 1999**

(Millions of dollars)			
Year	Domestic	International <sup>1</sup>	Total
1993	588.8	224.9	813.7
1994	562.7	296.4	859.1
1995	694.2	292.3	986.5
1996	655.3	350.5	1,005.7
1997	709.0	357.3	1,066.3
1998	762.0	347.7	1,109.7
1999 <sup>2</sup>	806.4	350.5	1,156.9

1 Includes transborder and other international.

2 Preliminary data.

Source: Statistics Canada, Cat. 51-206

## CANADA-US SERVICES

From 1993 to 1999, air cargo transport between Canada and the United States soared from \$15.3 billion to \$37.7 billion, for an annual average growth rate of 16 per cent. Air growth rate was larger than the average 12 per cent growth registered for total Canada-US trade over the same period. As a result, the air share of total Canada-US trade rose from 5.8 per cent in 1993 to 7.2 per cent in 1999.

The "electrical/electronic machinery and material" sector contributed to the growth in air transport between Canada and the United States from 1993 to 1999. During this period commodities recorded an average annual growth rate of 30 per cent in exports by air, rising from \$0.9 billion to \$4.6 billion. In imports, the average growth was 21 per cent rising from \$2.2 billion to \$6.9 billion over the period.

In 1999, commodities shipped by air to the United States totalled \$17.5 billion. These included electrical/electronic machinery and material with \$4.6 billion, other machinery and equipment with \$3.9 billion, and a variety of manufactured goods (mainly transportation material and high-valued aircraft equipment) totalling \$8.5 billion. Imports by air from the

United States amounted to \$20.2 billion. They included electrical/electronic material with \$6.9 billion, machinery and equipment with \$4.6 billion, chemical products with \$1.5 billion, and various manufactured goods and end-products.

It should be noted that a significant portion of cargo moving on air waybills is actually trucked between Canada and the United States, but is recorded in trade data as air traffic. Many Canadian all-cargo operators also provide transborder cargo services under contract to the major courier companies.

Table 12-25 shows the evolution of the air share in Canada's trade with the United States and other countries from 1993 to 1999.

**TABLE 12-25: VALUE OF CANADIAN INTERNATIONAL TRADE'S AIR SHARE, 1993 – 1999**

(Billions of dollars)					
	Air Exports <sup>1</sup>	Air Imports	Air Total	All Modes Total	Air Share (per cent)
<b>Canada/US</b>					
1993	6.76	8.55	15.31	264.50	5.8
1995	9.80	12.97	22.77	358.43	6.4
1997	12.20	16.89	29.08	429.43	6.8
1999	17.52	20.18	37.70	523.50	7.2
<b>Canada/Other countries</b>					
1993	6.29	9.33	15.62	92.97	16.8
1995	8.41	14.58	23.00	129.38	17.8
1997	8.87	19.49	28.36	142.74	19.9
1999	9.75	24.38	34.13	151.55	22.5

1 Includes domestic exports and re-exports.

Source: Statistics Canada, Cat. 65-202 and 65-203; special tabulations for exports

## OTHER INTERNATIONAL SERVICES

From 1993 to 1999, air cargo transport between Canada and countries other than the United States was robust, growing at an annual average rate of 13.9 per cent, from \$15.6 billion to \$34.1 billion. This increased growth was largely fuelled by strong imports from Europe and Pacific Rim countries, with an average annual growth of 17.4 per cent. As a result, the air mode share rose from 17 per cent to over 22 per cent of total trade between Canada and overseas countries.

Main imports shipped by air from overseas countries included the "electrical/electronic machinery and material" group with \$7.5 billion in 1999, other machinery and equipment with \$5.4 billion, chemical products with \$2.6 billion, and various manufactured goods (mainly transportation material such as high-valued aircraft equipment) totalling nearly \$8 billion. The electronic machinery and material group registered the highest average annual growth, with a rate of 28 per cent over the



As for exports by air to countries other than the United States, their growth was only 7.6 per cent over the period. The currency crisis and recession that hit the Asian and Latin American economies in 1998 combined with a slow recovery in 1999, have affected Canadian exports to these countries.

Tables 12-26 and 12-27 show main origins/destinations for Canada's trade with countries other than the United States shipped by the air mode in 1999. Western European and Asian countries dominated air transport as origin/destination of shipments moved to/from Canada. Over 80 per cent of air transport trade with overseas countries involved eastern provinces, mainly Ontario and Quebec.

**TABLE 12-26: TOTAL EXPORTS BY AIR  
TO COUNTRIES OTHER THAN THE US  
BY MAIN COUNTRIES OF DESTINATION, 1999**

(Millions of dollars)

<i>Destinations</i>	<i>Province of Origin</i>		<i>Air Exports</i>	<i>Total (Per cent)</i>
	<i>Eastern provinces<sup>1</sup></i>	<i>Western provinces</i>		
<b>Western Europe</b>	<b>4,699.7</b>	<b>976.8</b>	<b>5,676.5</b>	<b>58.2</b>
UK	1,791.2	146.2	1,937.4	
France	717.6	57.3	774.8	
Germany	646.1	78.9	725.0	
Belgium	97.3	560.3	657.6	
Switzerland	297.0	23.8	320.8	
Other	1,150.6	110.4	1,261.0	
<b>Pacific Rim</b>	<b>1,799.2</b>	<b>591.9</b>	<b>2,391.1</b>	<b>24.5</b>
Hong Kong	367.7	143.3	511.0	
Japan	321.4	127.9	449.3	
Australia	235.2	71.0	306.2	
South Korea	233.6	51.5	285.1	
Taiwan	170.2	64.6	234.9	
Other	471.1	133.6	604.7	
<b>Other countries</b>	<b>1,456.2</b>	<b>228.8</b>	<b>1,685.0</b>	<b>17.3</b>
<b>Total Exports by Air</b>	<b>7,955.1</b>	<b>1,797.5</b>	<b>9,752.7</b>	<b>100.0</b>

<sup>1</sup> Including domestic exports and re-exports; eastern provinces include Ontario, Quebec and Atlantic provinces; western provinces include British Columbia, Prairies, and territories.

Source: Statistics Canada, Cat. 65-202 and special tabulations

**TABLE 12-27: TOTAL IMPORTS BY AIR  
FROM COUNTRIES OTHER THAN THE US  
BY MAIN COUNTRIES OF ORIGIN, 1999**

(Millions of dollars)

<i>Origins</i>	<i>Province of Clearance</i>		<i>Total Air Imports</i>	<i>Total (Per cent)</i>
	<i>Eastern provinces<sup>1</sup></i>	<i>Western provinces</i>		
<b>Western Europe</b>	<b>10,855.1</b>	<b>1,063.8</b>	<b>11,918.9</b>	<b>48.9</b>
UK	2,790.5	342.8	3,133.3	
France	2,603.0	89.4	2,692.4	
Germany	1,698.0	176.3	1,874.3	
Italy	770.4	167.6	938.0	
Switzerland	724.4	31.2	755.6	
Ireland	629.2	24.6	653.8	
Other	1,639.7	231.8	1,871.5	
<b>Pacific Rim</b>	<b>7,550.6</b>	<b>1,278.7</b>	<b>8,829.3</b>	<b>36.2</b>
Japan	2,096.5	329.0	2,425.5	
Taiwan	1,173.5	151.9	1,325.4	
Malaysia	829.9	147.9	977.8	
South Korea	865.5	109.7	975.1	
People's Republic of China	716.0	123.2	839.3	
Philippines	559.5	54.2	613.7	
Other	1,309.7	362.7	1,672.5	
<b>Other countries</b>	<b>3,132.3</b>	<b>499.7</b>	<b>3,632.1</b>	<b>14.9</b>
<b>Total Imports by Air</b>	<b>21,538.0</b>	<b>2,842.2</b>	<b>24,380.2</b>	<b>100.0</b>

<sup>1</sup> Eastern provinces include Ontario, Quebec and Atlantic provinces; western provinces include British Columbia, Prairies, and territories.

Source: Statistics Canada, Cat. 65-203 and special tabulations

## CARGO TRANSSHIPMENT PROGRAM

To improve the use of Mirabel Airport, in 1982, the federal government introduced a program to allow the Canadian Transportation Agency to permit Canadian and foreign carriers to carry international cargo transshipments via Mirabel coming from and destined to points outside Canada. In-transit cargo may be stored in bond pending its transportation by air or other mode to its final destination. Carriers are not authorized to carry Canadian originating or destined cargo unless specifically licensed to do so pursuant to a bilateral air agreement, an arrangement or under Canadian charter regulations.

The program was expanded to include Hamilton and Windsor airports in Ontario in 1987 and 1993, respectively, and once again in 2000 to include Gander, Newfoundland.





# PASSENGER TRANSPORTATION 13

*Patronage of public transportation services in urban areas increased in 1999.*

*In intercity passenger movements, with the exception of air transportation for long-haul journeys, commercial transportation traffic growth remained marginal.*

Canadians rely on all modes of the transportation system — air, ship, rail and road, including passenger vehicles and scheduled urban and intercity transit — to get them where they need to go. This chapter looks at the number of passengers carried by each mode, and how far they travelled.

## RAIL TRANSPORTATION

### RAIL PASSENGER TRAFFIC

In 1999, rail passenger traffic rose by about three per cent to just over 4.1 million. VIA Rail carried almost 92 per cent of these passengers, while the four Class II carriers — Algoma Central Railway, BC Rail, Ontario Northland and the North Shore and Labrador

Railway — carried the rest. (Class II carriers include those known variously as regional and shortline railways.) All railways contributed to the increase in traffic.

Passenger-kilometres increased by over nine per cent to 1.59 billion. Again, all five railways contributed to the growth, with VIA Rail's output increasing by 8.7 per cent and that of the Class II railways by 17 per cent.

Table 13-1 shows the relative increases in the number of passengers and passenger-kilometres.

Commuter rail services in Canada's three largest cities — Toronto, Montreal and Vancouver — show a 44 per cent growth in passenger traffic between 1994 and 1999. Vancouver's West Coast Express introduced new service at the end of 1995, which accounts for some of the growth; Agence métropolitaine de transport (AMT) also introduced new service in Montreal and saw its passenger count grow by over 100 per cent. GO Transit traffic in and around Toronto rose by 20 per cent over the same period. Table 13-2 shows the commuter passenger traffic for the three cities from 1994 to 1999.

**TABLE 13-1: PASSENGER AND PASSENGER-KILOMETRES FOR VIA RAIL AND CLASS II RAIL CARRIERS, 1994 – 1999**

Year	VIA Rail	Class II	Total
<b>Passengers</b>			
1994	3,586,000	441,622	4,027,622
1995	3,597,000	414,315	4,011,315
1996	3,666,000	323,405	3,989,405
1997	3,765,000	339,196	4,104,196
1998	3,646,000	334,280	3,980,280
1999	3,757,000	345,874	4,102,874
<b>Passenger-kilometres</b>			
1994	1,342,421,423	84,959,534	1,427,380,957
1995	1,382,568,118	84,417,430	1,466,985,548
1996	1,436,197,898	77,137,263	1,513,335,161
1997	1,423,479,252	91,113,448	1,514,592,700
1998	1,377,598,464	80,233,805	1,457,832,269
1999	1,498,300,000	93,978,663	1,592,278,663

Source: Statistics Canada, Cat. 52-216; Transport Canada

**TABLE 13-2: COMMUTER RAIL PASSENGERS IN TORONTO, MONTREAL AND VANCOUVER, 1994 – 1999**

Year	Commuter rail passengers (000)
1994	31,263
1995	29,559
1996	33,313
1997	37,091
1998	40,769
1999	43,914

Source: Transport Canada, GO Transit, AMT and West Coast Express

## BUS TRANSPORTATION

### INTERCITY BUS SERVICE

Although intercity bus services represent a small segment of the industry and generate a small share of the industry's operating revenues, they provide the bulk of long-distance bus transportation. This segment of the industry has two service categories, scheduled intercity carriers and charter carriers, with the latter also operating airport, sightseeing and tour services. Most of the larger carriers in these two types of bus operations provide both intercity and charter services.

Table 13-3 list Canada's scheduled carriers and the markets they served in 2000.

**TABLE 13-3: CANADIAN SCHEDULED CARRIERS AND MARKETS SERVED, 2000**

<i>Carrier/Carrier Group</i>	<i>Markets Served</i>
Laidlaw Carriers Greyhound	Ontario West; local service in British Columbia, Alberta and Ontario; International service
Grey Goose	Manitoba & Northwestern Ontario
Voyageur Colonial	Ottawa-Montreal; Eastern Ontario
Penetang-Midland Coach Lines	Toronto-Barrie-Collingwood (Ontario)
Laidlaw Motor Coach	Vancouver Island (British Columbia)
Red Arrow (Pacific Western)	Calgary-Edmonton-Fort McMurray (Alberta)
Saskatchewan Transportation	Saskatchewan
Ontario Northland	Toronto-North Bay-Sudbury-Timmins (Ontario)
Trentway-Wagar (Coach USA)	Niagara-Toronto-Montreal (Ontario and Quebec)
Orleans Express	Montreal-Quebec City-Gaspe (Quebec)
Les Autobus Maheux	Montreal-Abitibi/Témiscamingue (Quebec)
Sherbus	Montreal-Estrie (Quebec)
SMT/Acadian	Maritime Provinces
DRL	Nova Scotia and Newfoundland

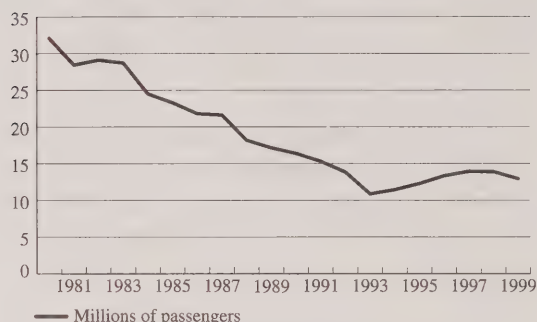
Note: The table is intended to be representative of the service available in each province/region, and is not a complete list of services.

Source: *Official Canadian Bus Guide, November/December 1999, information provincial officials*

### SCHEDULED INTERCITY CARRIERS

The total number of passengers using scheduled intercity services provided by all industry segments (intercity carriers, charter carriers and school bus operators) has been in a fairly steady decline since the late 1970s, hitting a low of 10.8 million passengers in 1993. As shown in Figure 13-1, ridership in recent years has been fairly stable, ranging from 12 to 14 million passengers annually. Following modest increases in ridership between 1994 and 1998, the number of passengers decreased by almost 1 million in 1999 from the year before.

**FIGURE 13-1: INTERCITY SCHEDULED BUS PASSENGERS, 1980 - 1999**



Source: Statistics Canada, *Passenger Bus and Urban Transit Statistics, Cat. 53-215*

In 1999, 28 operators with annual revenues exceeding \$200,000 reported total annual operating revenues of \$106.5 million and operating expenses of \$97.1 million. As Table 13-4 shows, approximately 62 per cent of the operating revenues of these operators came from scheduled intercity services, with charter and tour services contributing nine per cent, and parcel express 16 per cent.

**TABLE 13-4: SUMMARY OF REVENUES FOR SCHEDULED INTERCITY OPERATORS, 1999**

	<i>Large Companies</i>	<i>Small Companies</i>	<i>Total Intercity</i>	<i>Per cent of total</i>
Number of companies surveyed	13	15	28	
<b>Operating Revenues</b> (Thousands of dollars)				
Scheduled Intercity Services	57,058	8,824	65,882	61.9
Urban Transit Services	2,242	0	2,242	2.1
Charter Services	7,492	1,829	9,321	8.8
School Bus Services (Home/school)	678	1,755	2,433	2.3
Other Passenger Bus Services	382	2,368	2,750	2.6
Sightseeing and Shuttle Services	347	0	347	0.3
Parcels and Delivery	16,566	0	16,566	15.6
Other Operating Revenues	5,270	1,353	6,624	6.2
Subsidies	0	324	324	0.3
<b>Total Operating Revenues</b>	<b>90,036</b>	<b>16,453</b>	<b>106,490</b>	<b>100.0</b>

Source: Statistics Canada, *Passenger Bus and Urban Transit Statistics, Cat. 53-215*

Using a service line revenue breakdown (Table 11-7), scheduled intercity revenues in 1999 were \$235.8 million — \$65.9 million by scheduled carriers, \$26.9 million by charter carriers and \$143.1 million by school bus operators.

### CHARTER OPERATORS

Charter bus services are generally characterized by the rental of a bus to a person or group, where all passengers embark and disembark at the same point. Charter operators have the flexibility to offer a broad range of

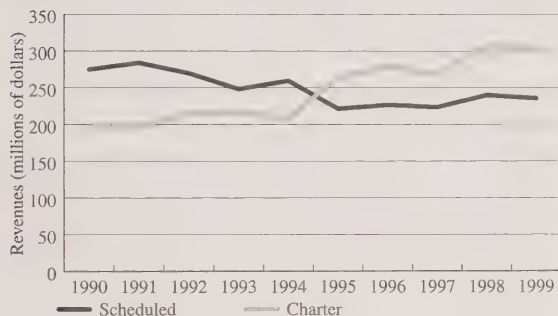
services, such as half-day school trips, three-week excursions, one-way trips and local sightseeing tours.

Charter bus companies earned almost two thirds of their revenues through charter services, as was the case for scheduled intercity operators, a significant portion of their revenues are also generated from other services, including eight per cent from intercity services and 19 per cent from other passenger services such as sightseeing, shuttle and tour services.

Figure 13-2 shows the changes in revenues generated from scheduled intercity service compared with charter service since 1990. There was a gradual increase in charter revenues between 1990 and 1994, followed by a more significant increase over the past five years. Scheduled intercity revenues gradually declined between 1990 and 1995, followed by a period of little change between 1995 and 1999.

**FIGURE 13-2: SCHEDULED INTERCITY AND CHARTER SERVICES REVENUE TRENDS, 1990 - 1999**

(Based on service lines)



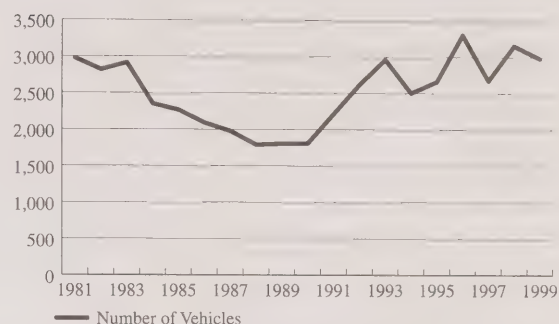
Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

Figure 13-3 shows the size of Canada's charter bus fleet from 1981 to 1999. The number of vehicles used in charter service peaked at 3,305 buses in 1996 and is now at approximately the same level as the early 1980s.

As the number of vehicles used in charter bus operations fluctuated during the 1990s, the utility or average annual use made of each vehicle steadily increased from a low of 40,000 kilometres in 1993 to almost 66,000 kilometres by 1999.

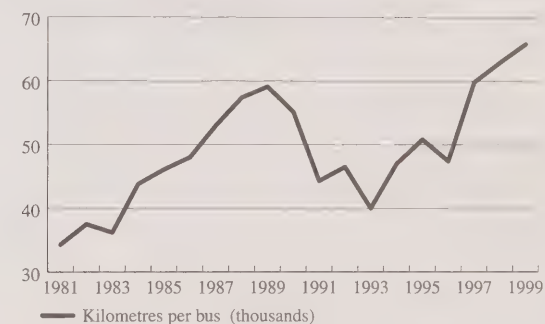
Figure 13-4 shows the utilization rate of the charter bus fleet from 1981 to 1999.

**FIGURE 13-3: CHARTER BUS FLEET SIZE, 1981 - 1999**



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

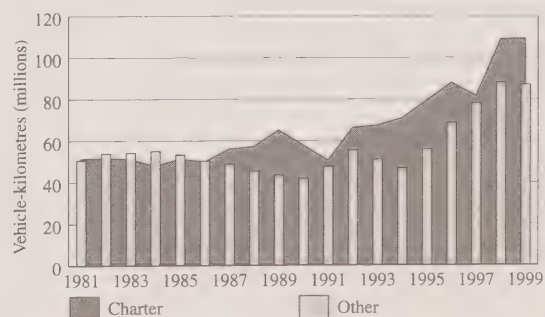
**FIGURE 13-4: CHARTER BUS FLEET UTILIZATION, 1981 - 1999**



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

The expansion in charter service is also indicated by an increase in annual bus-kilometres. As shown in Figure 13-5, bus-kilometres have doubled to 196.3 billion kilometres since 1991.

**FIGURE 13-5: CHARTER CARRIER BUS-KILOMETRES, 1981 - 1999**



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

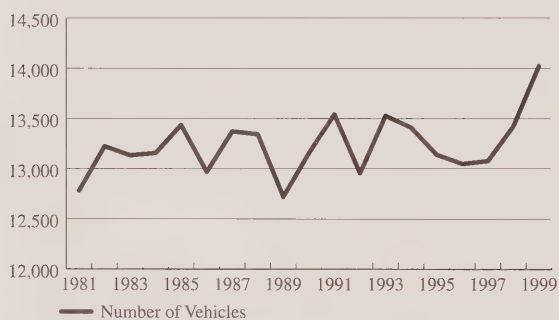


## URBAN TRANSIT

All major Canadian cities have some form of urban transit service. In terms of revenues, urban transit represents the largest component of Canada's bus industry. Excluding subsidies, transit companies accounted for 51 per cent of total bus industry revenues in 1999. Urban transit services are subsidized by both municipal and provincial governments, and transit revenues and subsidies combined accounted for 71 per cent of total bus revenues. Some transit operators also offer school bus and charter services, as well as services to travellers with disabilities.

The number of vehicles and the utilization rate remained fairly stable during the 1990s, with the number of vehicles in the 13,000 to 14,000 range and a utilization rate around 55,000 to 58,000 kilometres per vehicle. The number of vehicles in the urban transit fleet has increased seven per cent since 1997. Figure 13-6 shows the number of buses in Canada's urban fleet from 1981 to 1999.

FIGURE 13-6: URBAN TRANSIT FLEET SIZE, 1981 - 1999



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

The composition of the fleet has changed over the past five years, with significantly fewer standard motor coaches in operation. To make services more accessible,

TABLE 13-5: URBAN TRANSIT FLEET COMPOSITION, 1991 - 1999

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number of carriers reporting	65	74	74	84	80	77	65	62	66
Standard motor bus	10,474	9,757	10,196	10,085	9,855	9,622	9,030	8,554	8,234
Low-floor bus		135	145	188	305	499	1,019	1,827	2,453
Trolley coach	332	358	308	344	304	319	322	315	304
Articulated bus	458	364	373	359	306	287	287	297	325
Light rail vehicle	527	500	547	547	548	520	520	520	520
Heavy rail vehicle	1,379	1,735	1,679	1,381	1,381	1,373	1,381	1,395	1,419
Commuter rail vehicle				331	359	359	336	346	505
Other	372	107	279	176	82	70	182	169	262
<b>Total vehicles</b>	<b>13,542</b>	<b>12,956</b>	<b>13,527</b>	<b>13,411</b>	<b>13,140</b>	<b>13,049</b>	<b>13,077</b>	<b>13,423</b>	<b>14,022</b>

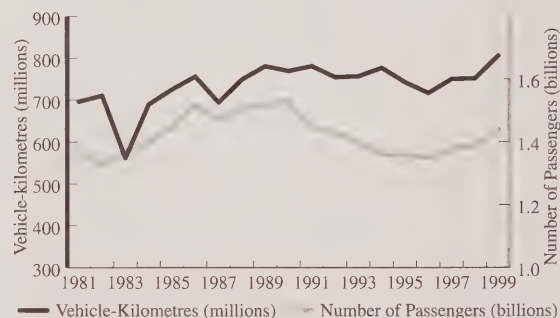
Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

low-floor buses are being added to fleets in cities such as Vancouver, Calgary, Thunder Bay, Kitchener and Montreal. The number of these buses in operation has increased substantially over the past three years. Table 13-5 shows the make-up of Canada's urban transit fleet by category from 1991 to 1999.

After a period of decline in the early 1990s, the number of passengers using urban transit has remained fairly constant since 1994. In 1998, 1.41 billion passengers used urban transit, equalling the level attained in 1992. Ridership levels in 1998 were 2.3 per cent higher than in 1997.

Not surprisingly, with the size of the urban transit fleet remaining fairly stable during the 1990s, the total distance travelled was also relatively constant during this period at around 750 million kilometres. Over the past two years, however, there has been a modest increase in the distance travelled, to over 800 vehicle-kilometres in 1999, and in the number of passengers carried, to 1.4 billion. This is the highest level since the early 1990s. Figure 13-7 tracks the trend in urban transit by number of passengers and vehicle-kilometres from 1981 to 1999.

FIGURE 13-7: LONG-TERM TRENDS IN URBAN TRANSIT, 1981 - 1999



Source: Statistics Canada, Passenger Bus and Urban Transit Statistics, Cat. 53-215

## AUTOMOBILE TRANSPORTATION

In 1999, Transport Canada commissioned the Canadian Vehicle Survey to provide the first national estimates of the characteristics and use of motor vehicles. The survey sample is drawn from provincial and territorial motor vehicle registration files and encompasses all major types of on-road motor vehicles, including cars, light and heavy trucks, and buses. The survey got under way in 1999 and the first comprehensive numbers for all provinces and territories were produced for the fourth quarter of 1999. Annual estimates for 1999 were produced based on incomplete records from the first year. Table 13-6 presents the results of the car and light truck population (all vehicles less than 4,500 kilograms) and associated vehicle- and passenger-kilometres.

In 2000, 16.8 million cars and light trucks were registered, a slight increase over 1999. The distribution by province/territory falls more or less by population, with Ontario having the most light vehicles at 6.3 million, followed by Quebec with 3.8 million, British Columbia with 2.2 million and Alberta with nearly 2 million. Registrations per capita averaged about 540 light vehicles for every 1,000 persons, with little variation by province. The highest per capita ownership was found in the Yukon, Alberta and Saskatchewan, with rates in excess of 600 vehicles per 1,000 people. The lowest per capita ownership was found in Nunavut, the Northwest Territories and Newfoundland, with rates below 500 vehicles per 1,000 people.

Annual vehicle-kilometres for 1999 were estimated at about 285 billion. Ontario was the single largest jurisdiction, with over 100 billion vehicle-kilometres, or 37 per cent of the total. Quebec had about 60 billion vehicle-kilometres, or 21 per cent of the total, followed by

Alberta and British Columbia each with about 13 per cent of the total. Average kilometres driven per registered car or light truck was about 17,000 nationally, with most jurisdictions clustered around this figure. Newfoundland and Alberta had the highest per-vehicle travel, each exceeding 20,000 per year, followed by New Brunswick at 19,000. With the exception of the territories, the rest of the provinces had per-vehicle travel between 14,000 and 18,000 kilometres per year.

Passenger-kilometres for light vehicles were estimated at 460 billion for 1999, with provincial/territorial breakdowns matching the vehicle-kilometres distribution. Average vehicle occupancy (the ratio of passenger-kilometres to vehicle-kilometres) varied between 1.6 and 2.0 persons per registered car or light truck.

## MARINE TRANSPORTATION

### CRUISE SHIP TRAFFIC

The Port of Vancouver recorded its 18th consecutive year of growth in 2000, passing the one million mark for the number of cruise passengers handled annually. In all, 28 vessels from 13 cruise lines made 333 sailings during the year, up from 309 in 1999.

In Halifax, port traffic also reached new heights, with 93 cruise ship calls and 138,000 passengers handled during the 2000 season. Many of these passenger trips originated in New York. Saint John was also a beneficiary of increased calls on this route from the northeastern United States, with over 101,000 passengers visiting during 2000.

TABLE 13-6: CAR AND LIGHT TRUCK STATISTICS, BY PROVINCE/TERRITORY, 1999 AND 2000

	Cars/light truck registrations (thousands)		Registrations per 1,000 persons		Vehicle-kilometres <sup>1</sup> (billions) 1999	Passenger-kilometres <sup>1</sup> (billions) 1999	Average distance driven (thousands) 1999	Average vehicle occupancy 1999
	1999	2000	1999	2000				
Newfoundland	240	243	444	450	5	8	20.8	1.6
Prince Edward Island	71	73	513	523	1	2	14.2	2.0
Nova Scotia	499	513	532	545	8	14	16.0	1.8
New Brunswick	422	431	559	570	8	14	19.0	1.8
Quebec	3,844	3,835	523	520	60	101	15.6	1.7
Ontario	6,174	6,344	536	544	107	169	17.3	1.6
Manitoba	567	584	496	509	10	16	17.6	1.6
Saskatchewan	616	620	601	606	10	17	16.2	1.7
Alberta	1,878	1,926	635	643	38	59	20.2	1.6
British Columbia	2,186	2,221	543	547	36	60	16.5	1.7
Yukon	22	21	723	689	0.3	N/A	13.3	N/A
Northwest Territories	17	18	411	424	0.2	N/A	11.8	N/A
Nunavut	2	2	78	84	0.0	N/A	0.0	N/A
<b>Canada</b>	<b>16,538</b>	<b>16,832</b>	<b>542</b>	<b>547</b>	<b>284</b>	<b>460</b>	<b>17.1</b>	<b>1.6</b>

<sup>1</sup> Vehicle-kilometres and passenger-kilometres for 1999 are estimated based on incomplete surveys from quarters 1-3.

Source: Canadian Vehicle Survey

The majority of these cruise passengers are US residents. The growth in the cruise ship industry reflects the aging of the baby boomer generation and the economic strength of the North American economy during 2000.

Marketing also plays an important role in the growth of the cruise industry, as can be seen in recent marketing initiatives. Most recently, for example, the New Brunswick Cruise Association was formed to encourage the development of the cruise industry in that province. The Association also represents New Brunswick's interests in the Atlantic Canada Cruise Association, formed in 1998. Another new marketing group is the St. Lawrence Cruise Association, which replaced the St. Lawrence International Cruise Committee. Yet another group marketing eastern Canada as a cruise destination is the New Atlantic Frontier, made up of about 30 ports in a loop from New York to Montreal that have pooled their marketing resources.

While cruise traffic was up at all ports from 1999 levels, the number of scheduled visits at Montreal and Quebec City, as well as at Atlantic Canada ports, was reduced by the bankruptcy of Premier Cruise Lines of Florida in September 2000 and the seizure of certain of their vessels for the non-payment of bills.

Table 13-7 shows the growth in international cruise ship traffic at major Canadian ports from 1990 to 2000.

**TABLE 13-7: INTERNATIONAL CRUISE SHIP TRAFFIC AT MAJOR CANADIAN PORTS, 1990 – 2000**

Year	(Passengers)				
	Vancouver	Montreal	Quebec City	Halifax	Saint John
1990	388,323	30,869	34,783	24,423	1,748
1991	423,928	47,047	51,363	43,512	3,402
1992	449,239	34,872	41,141	30,112	5,500
1993	519,942	30,626	38,642	30,917	12,379
1994	591,409	33,920	36,401	37,717	23,629
1995	596,744	27,384	38,981	30,257	12,226
1996	701,547	19,078	21,464	36,584	8,543
1997	816,537	29,324	36,569	44,328	19,813
1998	873,102	32,583	43,838	47,987	28,418
1999	947,659	18,306	34,628	107,837	40,000
2000 <sup>1</sup>	1,053,985	25,200	35,855	138,313	101,410

<sup>1</sup> Preliminary.

Source: Canada Port Authorities

## FERRY TRAFFIC

Traffic data for 2000 for all members of the Canadian Ferry Operators Association (CFOA) are not yet available. The 1999 traffic figures, however, provide a good indication of the size of the members' operations.

By far the largest operator in Canada (and celebrating its 40th anniversary), the British Columbia Ferry Corporation carried approximately 21.4 million passengers and 7.8 million vehicles in 1999. British Columbia's Ministry of Transportation and Highways inland ferry services carried a further 3.2 million passengers and 1.7 million vehicles. Another provincial service, La Société des traversiers du Québec, carried 5.6 million passengers and 2 million vehicles.

Marine Atlantic Inc., a federal Crown corporation, increased its traffic in 1999, carrying 477,761 passengers, 149,732 passenger vehicles and 76,905 commercial vehicles in its Gulf of St. Lawrence service between Newfoundland and Nova Scotia. The private ferry operators subsidized by the federal government also experienced an increase, carrying approximately 650,000 passengers, 300,000 passenger vehicles and 50,000 commercial vehicles in 1999. The remaining CFOA members accounted for approximately four million passengers and 1.8 million vehicle crossings.

## AIR TRANSPORTATION

### FEDERAL GOVERNMENT POLICY INITIATIVES

#### INDUSTRY RESTRUCTURING

On the domestic scene, the year 2000 was one of transition as the airline industry made significant changes to passenger services in response to Air Canada's acquisition of Canadian Airlines International Ltd. Bill C-26, which came into effect on July 5, 2000, included a number of elements focusing on the consumer. These included the following amendments to the *Canada Transportation Act*:

- expanded exit notice provisions whereby notice must now be given when 50 per cent or more of the passenger carrying capacity of all operators between two points is affected by the discontinuance of a service;
- the carrier giving notice is now required to provide an opportunity for officials of the affected communities to meet with them and discuss the impacts of the discontinuance;
- increased authority for the Canadian Transportation Agency to review all fares on monopoly routes;
- restoration of the Canadian Transportation Agency's ability to review the terms and conditions of carriage for domestic services; and



- new obligations for Air Canada to ensure customer service in both official languages on both its national and regional network, where numbers warrant as defined by the *Official Languages Act*, with phase-in periods for specific regions and services.

Bill C-26 also established the position of Air Travel Complaints Commissioner at the Canadian Transportation Agency. Mr. Bruce Hood was appointed as the first Commissioner on August 1, 2000, for a one-year period. The Commissioner, who may be appointed for an additional one-year term, has the role of reviewing and, where possible, mediating complaints that have not been resolved by the carrier to the satisfaction of the complainant. The Commissioner is required to issue a report on the consumer complaints handled by his office at six-month intervals. The report is required to set out the number and nature of complaints that were filed, including the airlines involved, how these complaints were dealt with, and any systemic problems noted. These reports will be incorporated into the Canadian Transportation Agency's annual report.

See Chapter 11 "Structure of the Transportation Industry" for more information on this legislation.

### Monitoring

On August 1, 2000, the Minister of Transport appointed Ms. Debra Ward as his Independent Transition Observer on Airline Restructuring. Ms. Ward's mandate is to measure, over the course of the following 18 to 24 months, whether Bill C-26 is having the intended effects of promoting competition and satisfying the air transportation needs of Canadians. She is expected to examine the overall impact of airline restructuring on: consumers; urban, rural and remote communities; travel agents; airports; and airlines and their employees. She is to submit a report on her findings to the Minister of Transport at six-month intervals, with the first interim report expected in February 2001.

## INTERNATIONAL AIR POLICY

### Scheduled Air Services

As part of its approval of Air Canada's acquisition of Canadian Airlines, on December 21, 1999, the Government of Canada announced an amended framework for international scheduled air services. The

framework took into account Air Canada's concerns stemming from the acquisition. These items included:

- suspension of the "use it or lose it" provision<sup>1</sup> in most international markets until the beginning of the 2001–2002 winter season, to allow Air Canada and Canadian Airlines time to reorganize their international air services;
- the allocation to Air Canada of all slots at New York's LaGuardia and Chicago's O'Hare airports, subject to the terms and conditions set out in the Minister's letter of March 10, 1995<sup>2</sup>; and
- a review of Canada's international air policy with a view to liberalization in the 2001–2002 winter season.

Appendix 13-1 includes a more detailed description of the amended framework.

### Charter Air Services

On April 4, 2000, a new policy for international charter air services was announced, replacing the policy that had been in effect since 1978. The new policy removed fences (regulatory limits) attached to passenger charter air services, such as advance booking and minimum stay requirements, and eliminated restrictions on one-way travel. The new policy maintains a distinction between international charter services and scheduled air services to preserve the integrity of the international scheduled air services covered by Canada's bilateral air agreements.<sup>3</sup> Foreign operators are permitted to operate charter air services under the same conditions as Canadian operators. The policy also continues to protect the advance payments made by passengers to tour operators received by air carriers for charter air transportation.

The revised policy had the immediate effect of confirming the approach to charter air services being promoted by tour operators and other third-party sales agents. International charter activity, however, did not change significantly. Canada's travel patterns in this segment of travel are fairly stable, with a greater emphasis on transatlantic travel in the summer and southern destinations during the colder months.

### Bilateral Initiatives

Canada's bilateral air agreements with other countries effective as of December 31, 2000, are listed in Table 13-8. Over the last year, Canada's two major

1 Under the "use it or lose it" provisions of Canada's international air policy, an airline has one year from the date of carrier selection to implement a new service or the designation becomes contestable. At year-end, the following destinations were open to be contested: Bulgaria, Dominican Republic, India (for transatlantic services), Indonesia, Ivory Coast, Malaysia, Pakistan, Peru, Philippines, St. Kitts and Nevis, and St. Lucia.

2 The slots were first obtained by the federal government during the 1995 air services negotiations for "Open Skies" with the United States, and were allocated to both Air Canada and Canadian Airlines by the Minister of Transport at that time.

3 Under Canadian charter regulations, the direct sale of charter seats to the public by an airline is prohibited. Normally, a tour operator or travel agency makes sales to the public.



carriers have been in a period of transition leading to integration. Air Canada has had to use Canadian Airlines' aircraft and crew on many international services. In some cases, the two companies were selling seats on each other's flights (cross code-sharing). The focus of Canada's bilateral air negotiations program has been to secure foreign government approval of Air Canada/Canadian Airlines scheduled flights under various service scenarios and corporate transition plans.

**TABLE 13-8: COUNTRIES/TERRITORIES WITH BILATERAL AIR AGREEMENTS WITH CANADA AS OF DECEMBER 31, 2000**

Antigua	El Salvador	Japan	Russia
Argentina	Fiji	Jordan	St. Kitts and Nevis
Australia	Finland	Lebanon	St. Lucia
Austria	France	Malaysia	Saudi Arabia
Bahamas	Germany	Mexico	Singapore <sup>1</sup>
Barbados	Greece	Morocco	South Korea
Belgium	Guatemala	Netherlands	Spain
Brazil	Haiti	Netherlands Antilles	Sweden
Bulgaria	Hong Kong	New Zealand	Switzerland
Cayman Islands	Hungary	Nicaragua	Thailand
Chile	Iceland <sup>1</sup>	Norway	Trinidad and Tobago
China	India	Pakistan	Turkey
Costa Rica	Indonesia	Panama	Ukraine
Cuba	Ireland	Peru	United Arab Emirates
Czech Republic	Israel <sup>2</sup>	Philippines	United Kingdom
Denmark	Italy	Poland	Venezuela
Dominican Republic	Ivory Coast	Portugal	
Egypt	Jamaica	Romania	

1 Services to Iceland and Singapore are being operated under memoranda of understanding that are in force.

2 Services to Israel are being operated under temporary arrangements.

Source: Transport Canada, Air Policy

On March 22, 2000, the Ministers of Transport and Foreign Affairs announced improved access for Canada's airlines to the Hong Kong market. Air Canada's right to use Canadian Airlines aircraft and crew and the rights for both airlines to market their services on each other's flights were also secured.

Under the new agreement with Hong Kong, airlines from Canada and Hong Kong are permitted to operate scheduled air services between Hong Kong and any Canadian city, with the flexibility to operate via intermediate countries and beyond each other's territory. The agreement also provides opportunities for new carriers on both sides to launch scheduled passenger and all-cargo air services between Canada and Hong Kong. In addition, the government secured Air Canada's right to initiate a daily air service between Toronto and Hong Kong, which began in May 2000.

On May 7, 2000, amendments to an agreement with Japan allowed Air Canada and Canadian Airlines to serve Japan both as distinct brands and jointly, while Air Canada dealt with the transition issues involved in its

acquisition and integration of Canadian Airlines. As a result, Air Canada and Canadian Airlines were able to jointly market each other's flights, including Air Canada's new Toronto-Tokyo daily service. Among the code-sharing provisions included in the new agreement, Canadian air carriers can now market their services to Japanese cities beyond the traditional Japanese gateway airports through code-sharing with Japanese air carriers. Japanese air carriers received reciprocal rights.

New flexible code-sharing regimes were also concluded with Australia and New Zealand. In addition, a new agreement with Austria will facilitate new direct flights by Austrian Airlines to Toronto beginning in the spring of 2001.

## DOMESTIC SERVICES AND TRAFFIC

Air Canada's domestic service levels and patterns changed during 2000, reflecting the integration of Canadian Airlines' services into its own schedule. In addition, other carriers introduced a number of new air services to the Canadian public throughout 2000. Carriers such as WestJet, Canada 3000 and Royal Aviation all increased the routes they served and announced several new plane orders to further expand services. A new carrier, CanJet, entered Canada's eastern market, while small carriers like Hawkair and Peace Air expanded in the west. New entrants Roots Air and London Air announced plans to begin scheduled service operations early in 2001.

On April 3, 2000, Air Canada and Canadian Airlines, along with their wholly owned subsidiaries and commercial partners, began operating an integrated, non-competing route schedule. The redesigned schedule eliminated previously duplicated departure times, allowing Air Canada and Canadian Airlines to re-deploy their aircraft fleet in an effort to capture operating synergies and better match market demand. As a result, the domestic summer seating capacity in the combined schedule was reduced by approximately 15 per cent compared with the same period in 1999. Air Canada's domestic winter 2000-2001 seating capacity was four per cent lower as compared with that for 1999-2000.

Pursuant to the commitment made to the Minister of Transport, Air Canada agreed to continue to serve all communities that were being served in December 1999 by Air Canada, Canadian Airlines International Ltd. or any of their wholly owned subsidiaries. With confirmation in August that Canadian Regional Airlines Ltd. would remain with Air Canada, points served by that regional operator were also subject to this service commitment. In total, 68 communities across the country, in all provinces and

territories, were affected by the commitment, which was made enforceable as part of the airline restructuring legislation, Bill C-26. Table 13-9 lists the communities affected. At year-end, Air Canada was fully complying with the service commitments.

**TABLE 13-9: AIR CANADA DOMESTIC AIR SERVICE COMMITMENTS**

<b>Yukon (1 point)</b>	Whitehorse	Ontario (cont'd)	North Bay
<b>Northwest Territories (3 points)</b>	Fort Smith Hay River Yellowknife		Ottawa Sarnia Sault Ste. Marie Sudbury Thunder Bay Timmins
<b>British Columbia (16 points)</b>	Castlegar Cranbrook Fort Nelson Fort St. John Kamloops Kelowna Penticton Prince George Prince Rupert Quesnel Sandspit Smithers Terrace Vancouver Victoria Williams Lake	<b>Quebec (10 points)</b>	Bagotville Baie Comeau Gaspe Îles-De-La-Madeleine Mont Joli Montreal Quebec City Rouyn-Noranda Sept-Îles Val D'Or
<b>Alberta (8 points)</b>	Calgary Edmonton Fort McMurray Grande Prairie High Level Lethbridge Peace River Rainbow Lake	<b>New Brunswick (5 points)</b>	Bathurst Fredericton Moncton Saint John St. Leonard
<b>Saskatchewan (2 points)</b>	Regina Saskatoon	<b>Prince Edward Island (1 point)</b>	Charlottetown
<b>Manitoba (2 points)</b>	Thompson Winnipeg	<b>Nova Scotia (3 points)</b>	Halifax Yarmouth Sydney
<b>Ontario (12 points)</b>	Kingston London	<b>Newfoundland (5 points)</b>	Deer Lake Gander Goose Bay St. John's Wabush

Source: Transport Canada, Air Policy

Several new domestic routes were started in 2000. As part of its new schedule, Air Canada offered a total of 10 new routes. Other airlines were active as well. WestJet continued to add services in western Canada and it expanded east by gradually adding Hamilton, Moncton and Ottawa before summer. In September, CanJet gradually introduced services to seven points across eastern Canada (service to Windsor was subsequently suspended). Canada 3000 and Royal Aviation also expanded significantly. These airlines and Air Transat now serve some 21 Canadian cities and provide increasingly

effective domestic competition to Air Canada. Table 13-10 shows the new routes introduced in 2000.

**TABLE 13-10: NEW DIRECT NON-STOP DOMESTIC SCHEDULED AIR SERVICES IN 2000**

<i>City Pair</i>	<i>Daily Service</i>	<i>Airline</i>
Charlottetown Montreal	1	Air Canada/Air Nova
Edmonton Montreal	1	Air Canada
Halifax St. John's	2	CanJet
Halifax Montreal	2	CanJet
Halifax Ottawa	3	CanJet
Halifax Montreal	1	Royal
Halifax Vancouver	1	Air Canada
Halifax Quebec City	1	Air Canada/Air Nova
Halifax Ottawa	1	Royal
Halifax Stephenville	2	Air Canada/Air Nova
Hamilton Winnipeg	3	WestJet
Hamilton Thunder Bay	2	WestJet
Hamilton Ottawa	3	WestJet
Hamilton Moncton	1	WestJet
Kelowna Toronto	1	Air Canada
Montreal London	1	Air Canada/Air Ontario
Montreal Ottawa	2	CanJet
Montreal St. John's	1	Air Canada/Air Nova
Montreal Toronto	2	CanJet
Montreal Windsor	1	Air Canada/Air Ontario
Ottawa Toronto	3	CanJet
Ottawa Toronto	5	Royal
Ottawa Windsor	3	Air Canada/Air Ontario
Terrace Vancouver	2	Hawkair
Toronto Winnipeg	2	CanJet
Toronto Vancouver	1	Royal

Source: Official Airline Guide

Air Canada's subsidiary, Air Nova, as well as the other regional and local air service operators serving Quebec and Atlantic Canada, moved to provide air services to communities that had been served by Inter-Canadien before it suspended operations in November 1999. Inter-Canadien never resumed service and subsequently terminated its business in May 2000. Air Labrador began scheduled air services in May to Charlo and Chatham/Miramichi, two New Brunswick communities left without air service when Inter-Canadien stopped operating. The communities received daily service to both Quebec City and Moncton. Unfortunately, the traffic loads were disappointing and by year-end, Air Labrador was signalling its intention to withdraw from these markets.

In April, Air Nova expanded frequencies on a number of routes within Quebec, including a new service between Quebec City and Baie-Comeau. At year-end, however, the airline announced that it was planning to discontinue this service due to a disappointing market response. Other local service operators also attempted to expand during the year but without success. Air Montreal ceased operations in May 2000 and Régionnaire was operating under bankruptcy protection.

By comparison, air services within Ontario expanded. CanJet, Royal Aviation and WestJet introduced or increased services in Hamilton, Ottawa and Toronto. As was the case across its entire network, Air Canada realigned its regional air services as a result of its acquisition of Canadian Airlines and eliminated many duplicate flights.

In the Prairies, air services continued to increase, mainly as a result of the addition of frequencies by WestJet. Scheduled services operated by Calm Air, formerly a regional affiliate of Canadian Airlines, were integrated within Air Canada's schedule in October. Restructuring had little effect on Calm Air's services in Manitoba and northern Ontario because Air Canada did not have a strong regional presence in the market before 2000.

Regional services provided within British Columbia were reduced as a result of Air Canada's realigned schedule, but these decreases were partially offset by expanded WestJet service. During the year, Hawkair (Terrace-Vancouver) and Peace Air (Prince George, Fort Nelson and Fort St. John) added new regional services in competition with Air Canada.

TABLE 13-12: NATIONAL AIRPORTS SYSTEM (NAS)  
NUMBER OF DOMESTIC MARKETS SERVED  
INCLUDING CHARTERS AS OF DECEMBER 2000

Airport	Number of Markets with Non-stop Flights			Number of Airlines <sup>1</sup>
	NAS Airports	Non-NAS Airports	Total	
Calgary	13	9	22	4
Charlottetown	2	0	2	1
Edmonton	11	8	19	5
Fredericton	6	0	6	1
Gander	2	1	3	3
Halifax	11	6	17	4
Iqaluit	1	11	12	4
Kelowna	5	1	6	2
London	3	2	5	1
Moncton	5	1	6	3
Montreal/Dorval <sup>2</sup>	13	15	28	8
Ottawa	13	6	19	9
Prince George	3	3	6	2
Quebec City	4	9	13	2
Regina	6	1	7	3
Saint John	4	0	4	1
St. John's	4	4	8	6
Saskatoon	6	4	10	3
Thunder Bay	4	9	13	4
Toronto	20	7	27	5
Vancouver	13	20	33	9
Victoria	6	0	6	3
Whitehorse	1	2	3	3
Winnipeg	9	20	29	11
Yellowknife	1	18	19	7

1 Regional airlines are counted as an airline only if they do not code-share with a major airline.  
2 There are no domestic services to Montreal/Mirabel.

Source: Official Airline Guide and airline timetables

TABLE 13-11: COMPETITION IN DOMESTIC AIR MARKETS AS OF AUGUST, 2000

Rank	Market <sup>1</sup>	Daily Seats 2000 <sup>2</sup>	Per cent change over 1999	Capacity Market Shares (per cent) -----					
				Air Canada <sup>3</sup>	WestJet	Royal	Canada 3000	Air Transat	Others
1	Montreal-Toronto	4,799	(4)	79	0	11	4	7	0
2	Toronto-Vancouver	4,365	(3)	83	0	5	5	7	0
3	Calgary-Vancouver	3,375	(16)	69	27	1	4	0	0
4	Calgary-Toronto	2,943	(7)	85	0	3	7	5	0
5	Ottawa-Toronto	2,782	(7)	93	0	7	0	0	0
6	Halifax-Toronto	2,373	9	76	0	9	10	5	0
7	Calgary-Edmonton	2,156	(8)	69	31	0	0	0	0
8	Toronto-Winnipeg	1,778	(4)	75	0	13	8	4	0
9	Vancouver-Victoria	1,618	3	87	0	0	0	0	13
10	Edmonton-Vancouver	1,588	3	61	31	2	6	0	0
11	Edmonton-Toronto	1,356	(15)	87	0	5	5	3	0
12	Calgary-Winnipeg	910	(13)	47	53	0	0	0	0
13	Kelowna-Vancouver	849	(5)	46	54	0	0	0	0
14	Halifax-Montreal	774	13	80	0	20	0	0	0
15	Vancouver-Winnipeg	745	8	70	0	5	16	9	0
16	Montreal-Vancouver	705	19	87	0	0	5	8	0
17	St. John's-Toronto	673	64	78	0	3	11	9	0
18	Prince George-Vancouver	649	(20)	64	36	0	0	0	0
19	Calgary-Regina	619	(5)	60	40	0	0	0	0
20	Calgary-Kelowna	608	(2)	50	50	0	0	0	0
21	Halifax-St. John's	607	(27)	92	0	0	8	0	0
22	Thunder Bay-Toronto	606	(6)	100	0	0	0	0	0
23	Ottawa-Vancouver	601	(7)	94	0	0	6	0	0
24	Calgary-Saskatoon	599	(5)	54	46	0	0	0	0
25	Montreal-Quebec City	571	(28)	92	0	0	0	0	8

1 The top 25 markets are ranked on the number of daily seats.

2 The number of daily seats is defined as the average number of seats offered on non-stop flights in each direction.

3 Data for Air Canada includes the number of seats operated by Canadian Airlines and regional code-share partners.

Source: Official Airline Guide and airline timetables



Air NorTerra, doing business as Canadian North, ceased operating under the Canadian Airlines designator in October and began operating under its own code. Air Canada maintained its presence in the Western Arctic by sharing its code with NWT Air, an affiliate of First Air. First Air operates under its own designator in the Eastern Arctic. In general, services to, from and within Northern Canada were not affected by the airline restructuring process in 2000.

Table 13-11 summarizes the levels of competition in terms of seats offered. This table confirms the domestic market dominance of Air Canada and its affiliates, which operated 77 per cent of the available domestic seating capacity in the top 25 domestic markets.

Table 13-12 shows the number of non-stop links to airports in the National Airports System (NAS). The number of links depends on the amount of traffic generated and the airport's role as a gateway to remote communities (e.g. Yellowknife, Winnipeg, Edmonton). Table 13-13 summarizes the growth of domestic air travel over the past 10 years. Preliminary airport statistics

TABLE 13-13: DOMESTIC PASSENGER TRAFFIC, 1988 – 1999

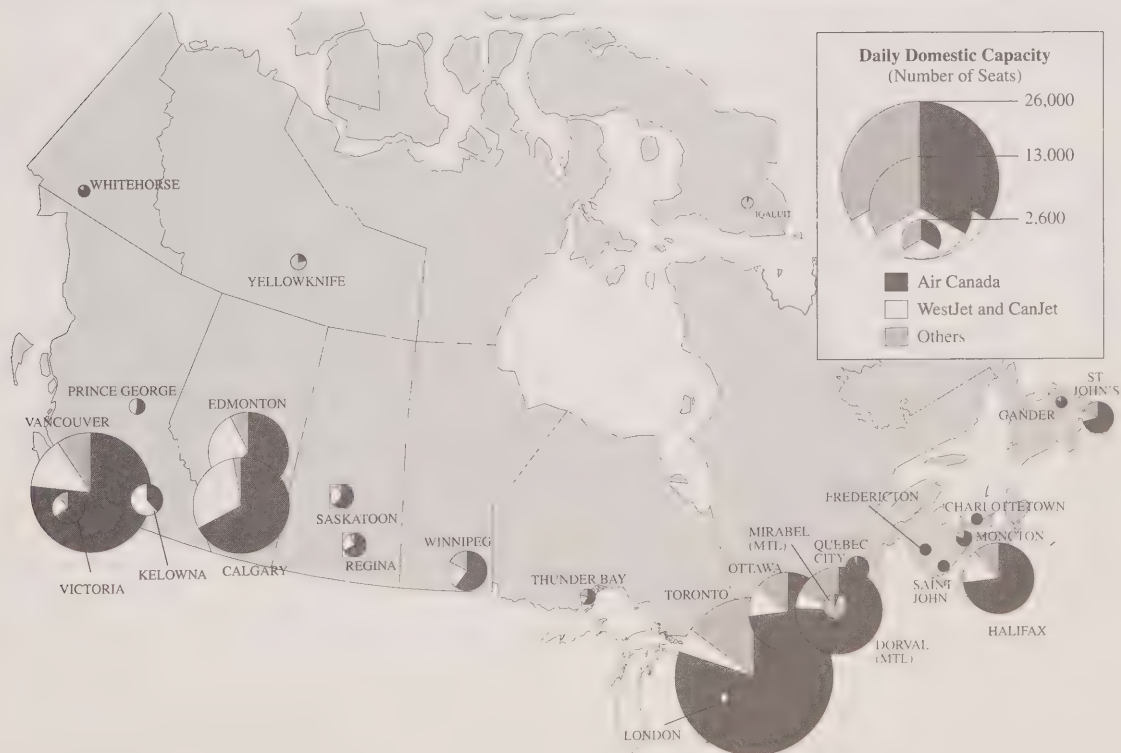
Year	Thousands	Per cent change
1988	23,338	—
1989	22,784	(2.4)
1990	22,784	0.0
1991	20,463	(10.2)
1992	20,500	0.2
1993	19,676	(4.0)
1994	19,902	1.1
1995	20,889	5.0
1996	23,371	11.9
1997	25,241	8.0
1998	25,972	2.9
1999	26,701	2.8

Note: Passenger traffic is based on enplaned and deplaned passengers but has been divided by two to avoid the double counting of passengers.

Source: Statistics Canada

suggest a moderate decrease of less than one per cent for 2000. Figure 13-8 presents domestic market shares at the NAS airports, measured in terms of capacity offered. In addition, Figure 13-9 summarizes the regional distribution of passenger traffic.

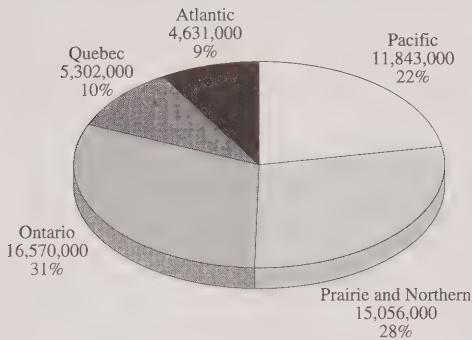
FIGURE 13-8: DOMESTIC MARKET SHARE AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS, DECEMBER 2000



Source: Transport Canada, Air Policy



FIGURE 13-9: DOMESTIC PASSENGER TRAFFIC BY REGION, 1999



Note: Enplaned and deplaned passengers (passengers double-counted).

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6

## CANADA-US TRANSBORDER SERVICES AND TRAFFIC

The transborder market continued to grow in 1999, nearly reaching the milestone of 20 million passengers. Preliminary airport statistics indicate that this milestone will be reached in 2000 with an estimated six per cent increase. Table 13-14 shows that 22 new transborder routes were established in 2000.

TABLE 13-14: NEW DIRECT NON-STOP TRANSBORDER SCHEDULED AIR SERVICES IN 2000

Route	Airline
Edmonton Los Angeles	Air Canada/Canadian
Montreal Boston	American Airlines/American Eagle
Montreal Denver	Air Canada
Montreal Philadelphia	Air Canada
Toronto Akron	Air Canada/Air Georgian
Toronto Albany	Air Canada/Air Georgian
Toronto Austin	Air Canada
Toronto Boston	American Airlines/American Eagle
Toronto Dayton	Air Canada/Air Georgian
Toronto Denver	United Airlines
Toronto Detroit	Air Canada/Canadian Regional
Toronto Fort Wayne	Air Canada/Air Georgian
Toronto Grand Rapids	Air Canada/Air Georgian
Toronto Los Angeles	American Airlines
Toronto Louisville	Air Canada/Air Georgian
Toronto Manchester	Air Canada/Air Georgian
Toronto New York/Kennedy	Delta Air Lines/Atlantic Southeast
Toronto Phoenix	America West
Vancouver Denver	Air Canada
Vancouver New York/Kennedy	Air Canada
Vancouver Spokane	Air Canada/Central Mountain Air
Vancouver Washington/Dulles	Air Canada

Source: Transport Canada, Air Policy

Table 13-15 summarizes the growth of transborder passenger traffic between 1991 and 1999. In the four-year period between the signing of the "Open Skies" Agreement in February 1995 and 1999, Canadian operators have assumed an equal share of the transborder market. During the same period, however, the US industry has carried 26 per cent more traffic. These data confirm that while the overall size of the market has grown, this has not been achieved at the expense of the air carriers of one country over the other.

TABLE 13-15: CANADA-US AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 1999

Period	Canadian Carriers		US Carriers		All Carriers	
	Passengers (thousands)	Market share (Per cent)	Passengers (thousands)	Market share (Per cent)	Passengers (thousands)	Annual change (Per cent)
1991	5,182	42.3	7,057	57.7	12,239	--
1992	5,619	42.2	7,688	57.8	13,307	3.6
1993	5,634	40.9	8,146	59.1	13,780	3.6
1994	5,908	43.3	7,735	56.7	13,643	(1.0)
1995	6,482	43.7	8,367	56.3	14,849	8.8
1996	7,850	45.7	9,317	54.3	17,167	15.6
1997	8,883	49.5	9,069	50.5	17,952	4.6
1998	9,490	50.6	9,266	49.4	18,756	4.5
1999	9,903	50.4	9,759	49.6	19,662	4.8

Note: Excludes passengers carried by non-Canadian and non-US carriers.

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4 and 6, and Transport Canada

Table 13-16 summarizes the number of US airports served from each of the NAS airports. It is important to note that this table includes the services offered by Canada's charter airlines. Appendix 13-3 lists the transborder services operated at the end of 2000.

TABLE 13-16: NUMBER OF US AIRPORTS SERVED BY NAS AIRPORTS (SCHEDULED NON-STOP ONLY) AS OF DECEMBER 31, 2000

	Number of US Airports	Number of Airlines	
		Canada	US
Calgary	14	3	6
Edmonton	9	3	2
Halifax	3	1	2
Kelowna	1	0	1
London	1	0	1
Montreal/Dorval	24	1	5
Montreal/Mirabel	2	3	0
Ottawa	10	1	5
Quebec City	3	1	2
Regina	1	0	1
Saskatoon	1	0	1
Thunder Bay	1	0	1
Toronto	57	4	9
Vancouver	23	5	8
Victoria	3	1	1
Whitehorse	1	1	0
Winnipeg	5	2	1

Notes:

Includes only airports with scheduled transborder service.

Regional airlines are counted as an airline only if they do not code-share with a major airline.

Includes seasonal services.

Source: Official Airline Guide and airline timetables

## INTERNATIONAL SERVICES AND TRAFFIC

Under the amended framework for Canada's international air services that was announced on December 21, 1999, the Minister of Transport made the following designations:

<i>Effective Date</i>	<i>Operator</i>	<i>Country Market</i>
February 16, 2000	Air Transat	United Kingdom and Germany
February 16, 2000	Canada 3000 Airlines	United Kingdom and Germany
February 16, 2000	Air Canada	Mexico
April 27, 2000	Canada 3000 Airlines	France
April 27, 2000	Royal Aviation	United Kingdom and France
October 17, 2000	Canada 3000 Airlines	India

In the case of the United Kingdom and France, both Canada 3000 and Royal Aviation had requested to be designated, and their requests were accommodated because Canada's air markets for both of these markets exceeded the 300,000-passenger threshold and the bilateral rights were available. Canada 3000 is now permitted to provide air service between Paris and Moncton, Montreal and Toronto. Royal Aviation can now provide seasonal service between Canada (Calgary, Edmonton, Montreal, Toronto and Winnipeg) and the United Kingdom (Birmingham, Bristol, Glasgow, London and Manchester), and seasonal air service between Paris and Montreal and Toronto. Canada 3000 plans on introducing Canada-India service in 2001.

Up until its integration into Air Canada, Canadian Airlines continued to operate daily Vancouver-Hong Kong scheduled air service in its own name. Service to Thailand, however, was suspended on January 25, 2000. All of Canadian Airlines' international services were fully integrated into Air Canada's schedule in October.

In December 1999, Air Canada and Canadian Airlines agreed to the transfer of authorities that permitted the reinstitution of daily non-stop Toronto-Tokyo services. Air Canada had then indicated its intention to use dormant authorities for several other international routes. All of the changes that are planned by Air Canada are subject to the successful negotiation of the necessary route rights with other countries.

Air Canada launched numerous new services in 2000, including flights between Toronto and Narita, Hong Kong, Munich and Amsterdam; Vancouver and Shanghai; and Calgary and Honolulu (winter only). In addition, its Vancouver-Honolulu service was extended to Sydney. Air Canada used the designation it received in February to begin a Toronto-Mexico City route using its own aircraft.

In 2000, Canada and Iceland signed a Memorandum of Understanding authorizing Icelandair to increase air service between Iceland and Halifax to four flights per week from the current three. The agreement was signed too late in the year, however, and Icelandair was unable to implement the increase in 2000.

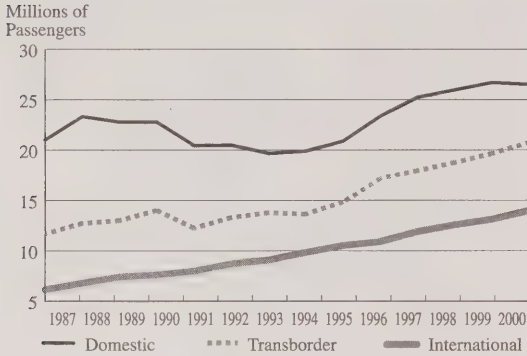
The number of international passengers grew by four per cent in 1999, with most of the growth in the Atlantic and southern markets. Moderate growth was expected in 2000 and preliminary airport statistics show a seven per cent increase in international passenger traffic. Table 13-17 provides more details on international passenger traffic. In addition, Figure 13-10 compares the changes in passenger air traffic by sector since 1987 and Figure 13-11 shows the distribution of traffic by sector for airports in the National Airports System (NAS).

**TABLE 13-17: CANADA-INTERNATIONAL AIR PASSENGERS SCHEDULED, REGIONAL AND CHARTER SERVICES, 1991 - 1999**

<i>Period</i>	<i>(Millions of passengers)</i>			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Southern</i>	<i>Total</i>
1991	4.776	1.000	2.222	7.998
1992	5.221	1.140	2.353	8.714
1993	5.345	1.288	2.444	9.077
1994	5.802	1.478	2.560	9.840
1995	6.147	1.760	2.614	10.521
1996	6.413	1.920	2.574	10.907
1997	6.699	2.304	2.905	11.908
1998	7.112	2.312	3.159	12.582
1999	7.390	2.418	3.330	13.138
<i>Period</i>	<i>(Per cent change)</i>			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Southern</i>	<i>Total</i>
1991-92	9.3	14.0	5.9	9.0
1992-93	2.4	13.0	3.9	4.2
1993-94	8.6	14.8	3.9	8.2
1994-95	6.0	19.1	3.0	7.2
1995-96	4.3	9.1	(1.5)	3.7
1996-97	4.5	20.0	12.9	9.2
1997-98	6.2	0.3	8.7	5.7
1998-99	3.9	4.6	5.4	4.4

Source: Aviation Statistics Centre, Statistics Canada, Statements 2, 4, and 6, and Transport Canada

FIGURE 13-10: AIR PASSENGERS BY SECTOR, 1987 - 2000



Source: Aviation Statistics Centre, Statistics Canada, Statements 2,4 and 6

Table 13-18 shows the number of international destinations served from airports in the National Airports System by scheduled airlines. The bulk of international services are concentrated in Canada's three largest cities: Montreal, Toronto and Vancouver.

TABLE 13-18: NUMBER OF INTERNATIONAL DESTINATIONS SERVED BY THE NATIONAL AIRPORTS SYSTEM (SCHEDULED DIRECT ONLY) AS OF DECEMBER 31, 2000

Airport	Number of International destinations	Number of Airlines	
		Canada	International
Calgary	5	3	-
Edmonton	3	2	-
Halifax	7	3	2
Iqaluit	2	1	1
Montreal/Dorval	27	1	15
Montreal/Mirabel	7	3	1
Ottawa	2	2	-
Quebec City	1	1	-
St. John's	2	1	1
Toronto	54	4	22
Vancouver	19	3	12
Whitehorse	1	1	1
Winnipeg	1	1	-

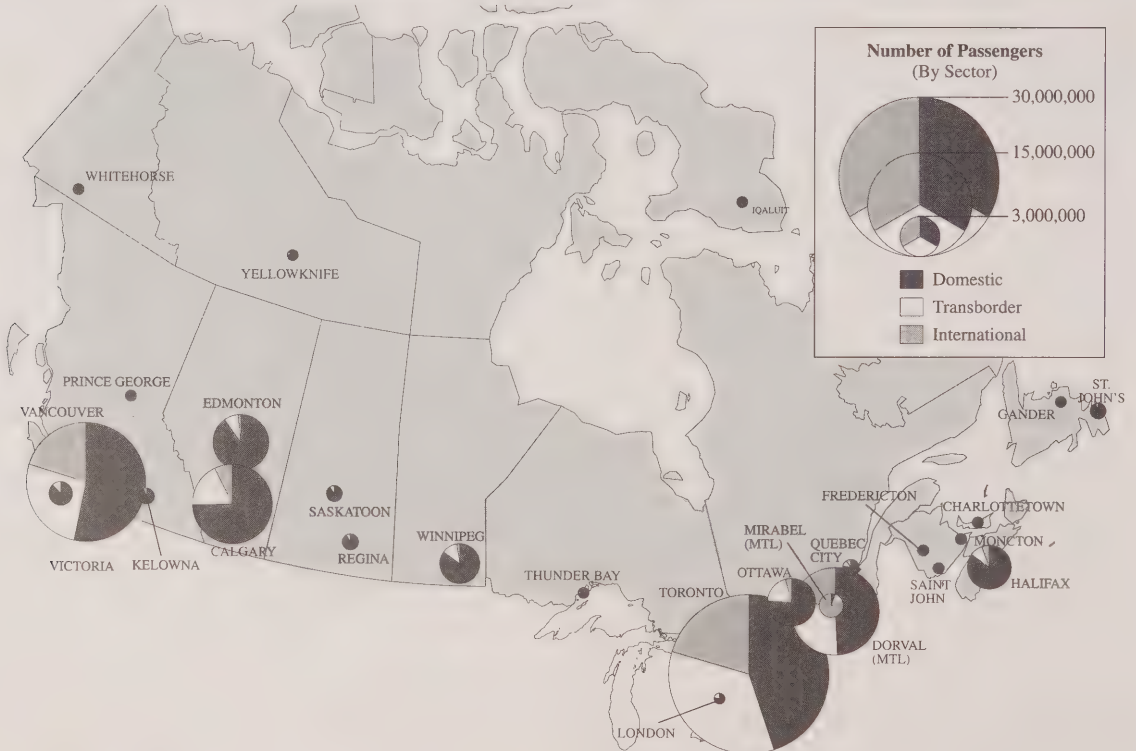
Notes: Includes only NAS airports with scheduled international service.

Includes seasonal services.

Includes scheduled services to the United Kingdom that were operated as charter services in 1999.

Source: Official Airline Guide and airline timetables

FIGURE 13-11: ENPLANED/DEPLANED PASSENGERS AT NATIONAL AIRPORTS SYSTEM (NAS) AIRPORTS BY SECTOR, 2000



Source: Transport Canada, Air Policy

Appendix 13-2 lists the international air services provided to and from Canada as of the end of 2000. These include foreign markets served by Canadian airlines as well as Canadian markets served by foreign airlines. This Appendix also provides a partial list of foreign markets served by charter airlines. There are 43 countries and territories with same-plane, scheduled services from Canada. Canadian airlines serve 28 of these countries.

## OTHER INTERNATIONAL INITIATIVES

At a diplomatic conference held in Montreal in May 1999, the member states of the International Civil Aviation Organization (ICAO) signed the *Montreal Convention*. This new legal regime, which replaced what was set out in the 1929 *Warsaw Convention*, deals with the liability of air carriers in the event of the death or injury of a passenger, loss of baggage or cargo, or delay of international flights. Once ratified by a least 30 of the ICAO's 185 member states, the *Montreal Convention* will allow victims to claim damages, regardless of whether the carrier is at fault. It will also permit damage claims resulting from a passenger death or injury to be filed with the country where the victim lived. Airlines will be required to provide immediate financial assistance to the victim's relatives, with amounts to be deducted later from the final settlement.

Although the ratification process was begun in 2000, by year-end it had still not received the required consent of 30 ICAO member states for the convention to come into force. This is now expected in early 2001. Canada has not yet ratified the new convention which requires passage of amendments to the *Carriage by Air Act*, likely to be introduced during 2001.



**APPENDIX 13-1****AMENDED FRAMEWORK FOR CANADA'S INTERNATIONAL AIR POLICY AS AT DECEMBER 21, 1999**

On December 21, 1999, the Minister of Transport announced a new competitive framework for Canada's international air services and bilateral relations. The amended framework was developed as a consequence of the government's approval on that date of the plan by Air Canada to acquire Canadian Airlines International Ltd. The elements of the amended framework included the following.

- All existing and future large international country markets (those exceeding the 300,000 annual scheduled-passenger threshold, currently the United Kingdom, France, Germany, Japan, Hong Kong, Taiwan and Mexico) will become open for designation to any Canadian airlines that wish to operate a scheduled international service subject to the necessary rights (including designation and capacity rights) being available or attainable under the bilateral agreements.
- The international air charter policy will be reviewed and liberalized beginning in early 2000.
- A review of the current international air policy will begin one year from the date of the taking up of Canadian Airlines' shares, with implementation of any changes to the policy to take effect with the International Air Travellers' Association (IATA) 2001–2002 winter season. The intention is to liberalize the international air policy.
- All country designations and assignments awarded to Air Canada and Canadian Airlines International Ltd. by the Government of Canada, and all related route, capacity and associated rights will remain allocated to the two companies following the taking up of Canadian Airlines' shares. From the date of the taking up of these shares to the beginning of the IATA 2001–2002 winter season, the "use it or lose it" provision of the current policy will not apply in order to allow the two airlines time to reorganize their international services. However, the following designations, which are currently contestable, will remain contestable: Bulgaria, Dominican Republic, India (for transatlantic services), Indonesia, Ivory Coast, Malaysia, Pakistan, Peru, Philippines, St. Kitts and Nevis, and St. Lucia.
- For any country markets not allocated, the federal government will, upon request, conduct a carrier selection in accordance with the current practice.
- The current bilateral air negotiation process will continue. The federal government will seek dual designation and cross code-share rights for Air Canada and Canadian Airlines International Ltd. in all country markets to which they are designated or assigned, as well as additional rights to meet the needs of all Canadian stakeholders and carriers.
- All slots at New York's LaGuardia and Chicago's O'Hare airports obtained by the Government of Canada during the 1995 air negotiations with the United States and allocated to Air Canada and Canadian Airlines International Ltd. by the Minister of Transport on March 10, 1995, will remain allocated to the two companies, or to Air Canada if Canadian Airlines International Ltd. becomes fully integrated into Air Canada, following the taking up of Canadian Airlines' shares and subject to the terms and conditions set out in the Minister's letter of March 10, 1995.

*Source: Transport Canada, Air Policy*

## APPENDIX 13-2

## INTERNATIONAL AIR SERVICES AS OF DECEMBER 31, 2000 (EXCLUDING CANADA-US TRANSBORDER SERVICES)

<i>Sector</i>	<i>Foreign Points Served by Air Canada</i>	<i>Canadian Points Served by Foreign Air Carriers</i>	<i>Major Charter Air Services<sup>1</sup></i>
<b>Atlantic</b>	Amsterdam Copenhagen Frankfurt Glasgow London/Heathrow Manchester Milan Munich Paris Rome Tel Aviv Zurich	Aeroflot: Montreal, Toronto Air France: Montreal, Toronto British Airways: Montreal, Toronto, Vancouver Czech Airlines: Montreal El Al Israel Airlines: Toronto Icelandair: Halifax KLM: Montreal, Toronto, Vancouver Lufthansa: Toronto, Vancouver Malev: Toronto Olympic: Montreal, Toronto Pakistan International: Toronto Royal Air Maroc: Montreal Sabena: Montreal Swissair: Montreal Tarom Romania: Montreal	Amsterdam Frankfurt Glasgow Lisbon London Manchester Paris Warsaw
<b>Pacific</b>	Beijing Hong Kong Nagoya Osaka Seoul Shanghai Sydney Taipei Tokyo	Air China: Vancouver Air Pacific: Vancouver Cathay Pacific: Toronto, Vancouver China Airlines: Vancouver Eva Airways: Vancouver Japan Airlines: Vancouver Korean Air: Vancouver Qantas: Vancouver Singapore Airlines: Vancouver	
<b>Southern</b>	Antigua Barbados Bermuda Buenos Aires Havana Kingston Mexico City Montego Bay Nassau Pointe-a-Pitre Port-au-Prince Port of Spain Sao Paulo St. Lucia	BWIA: Toronto Cubana: Montreal, Toronto Japan Airlines: Vancouver Lacsa: Montreal, Toronto Mexicana: Montreal, Toronto Tropical: Toronto	Acapulco Aruba Cancun Ciego de Avila Holguin Mazatlan Manzanillo Montego Bay Nassau Punta Cana Puerto Plata Puerto Vallarta St. Maarten Santo Domingo Varadero
<b>Other</b>	Air Transat: Glasgow, London, Manchester, Paris, St. Maarten Canada 3000: Glasgow, London, Manchester First Air: Kangerlussuaq	Air St-Pierre: Halifax, Montreal, St. John's, Sydney	

<sup>1</sup> Points with more than 50,000 passengers in 1999.

Source: Official Airline Guide and Transport Canada, Air Policy

## APPENDIX 13-3

### SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000

<i>Airport</i>	<i>Destination</i>	<i>Airline</i>
<b>Calgary</b>	Chicago Dallas/Fort Worth Denver Honolulu Houston Kahului Las Vegas Los Angeles Minneapolis/St. Paul Phoenix Salt Lake City San Francisco Seattle Spokane	Air Canada, American Airlines American Airlines United Airlines Air Canada (Canadian Airlines), Air Transat, Canada 3000 Air Canada (Canadian Airlines), Continental Canada 3000 Canada 3000 Air Canada, Canada 3000 Northwest Airlines Canada 3000 Delta (Skywest Airlines) Air Canada (Canadian Airlines), United Airlines Alaska Airlines (Horizon Air) Air Canada (Central Mountain Air)
<b>Dawson City</b>	Fairbanks	Air North
<b>Edmonton</b>	Chicago Denver Honolulu Kahului Las Vegas Los Angeles Minneapolis/St. Paul Phoenix Seattle	Air Canada (Canadian Airlines) Air Canada (AirBC) Air Transat, Canada 3000 Canada 3000 Canada 3000 Air Canada (Canadian Airlines), Canada 3000 Northwest Airlines Canada 3000 Alaska Airlines (Horizon Air)
<b>Halifax</b>	Boston New York/Newark Washington/Dulles	Air Canada (Air Nova), American Airlines (American Eagle) Air Canada, Continental (Continental Express) Air Canada
<b>Hamilton</b>	Pittsburgh	US Airways (Chautauqua Airlines)
<b>Kelowna</b>	Seattle	Alaska Airlines (Horizon Air)
<b>London</b>	Detroit	Northwest Airlines (Mesaba Airlines)
<b>Montreal/Dorval</b>	Atlanta Boston Chicago Cincinnati Cleveland Dallas/Fort Worth Denver Detroit Fort Lauderdale Hartford Los Angeles Miami Minneapolis/St. Paul New York/Kennedy New York/LaGuardia New York/Newark Orlando Philadelphia Pittsburgh Portland, Maine San Francisco Tampa/St. Petersburg Washington/Dulles Washington/Reagan	Delta Air Canada, American Airlines (American Eagle), Delta (Comair) Air Canada (Canadian Airlines), American Airlines Delta (Comair) Continental (Continental Express) American Airlines Air Canada Northwest Airlines Air Canada Air Canada (Air Nova) Air Canada Air Canada, American Airlines Northwest Airlines American Airlines (American Eagle) Air Canada, Delta (Comair) Air Canada, Continental Air Canada (Canadian Airlines) Air Canada, US Airways US Airways Air Canada (Air Nova) Air Canada Air Canada Air Canada Air Canada
<b>Montreal/Mirabel</b>	Fort Lauderdale Orlando	Air Transat, Canada 3000, Royal Airlines Air Transat, Royal Airlines

(continued)

**APPENDIX 13-3 (Continued)****SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000**

<i>Airport</i>	<i>Destination</i>	<i>Airline</i>
<b>Ottawa</b>	Boston Chicago Detroit New York/LaGuardia New York/Newark Philadelphia Pittsburgh Raleigh/Durham Washington/Dulles Washington/Reagan	Air Canada, American Airlines (American Eagle) Air Canada, American Airlines Northwest Airlines (Mesaba Airlines) Air Canada Air Canada (Canadian Regional), Continental (Continental Express) US Airways (Mesa Airlines) US Airways (PSA Airlines) Air Canada (Canadian Regional) Air Canada Air Canada
<b>Prince Rupert</b>	Ketchikan	Promech Air
<b>Quebec City</b>	Boston Fort Lauderdale New York/Newark	American Airlines (American Eagle) Air Transat Continental (Continental Express)
<b>Regina</b>	Minneapolis/St. Paul	Northwest Airlines
<b>Saskatoon</b>	Minneapolis/St. Paul	Northwest Airlines
<b>Thunder Bay</b>	Minneapolis/St. Paul	Northwest Airlines (Mesaba Airlines)
<b>Toronto</b>	Akron/Canton Albany Allentown Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Columbus Dallas/Fort Worth Dayton Denver Detroit Fort Lauderdale Fort Myers Fort Wayne Grand Rapids Gulfport/Biloxi Harrisburg Hartford Honolulu Houston Indianapolis Kansas City Las Vegas Los Angeles Louisville Manchester Miami Milwaukee Minneapolis/St. Paul Nashville New Orleans New York/Kennedy New York/LaGuardia New York/Newark Orlando	Air Canada (Air Georgian) Air Canada (Air Georgian) Air Canada (Air Ontario) Air Canada, Delta Air Canada (Air Ontario), US Airways (Piedmont Airlines) Air Canada, American Airlines (American Eagle) Air Canada (Canadian Regional), US Airways Air Canada, American Airlines, United Airlines Delta (Comair) Air Canada, Continental (Continental Express) Air Canada (Air Ontario) Air Canada (Canadian Airlines), American Airlines Air Canada (Air Georgian) Air Canada, United Airlines Air Canada (Canadian Regional), Northwest Airlines Air Canada, Air Transat, Canada 3000, Royal Airlines Air Canada, Air Transat, Canada 3000 Air Canada (Air Georgian) Air Canada (Air Georgian) Canada 3000 Air Canada (Air Ontario) Air Canada (Air Ontario) Air Canada (Canadian Airlines) Air Canada (Canadian Airlines), Continental US Airways (Chautauqua Airlines) Air Canada Air Canada Air Canada, American Airlines, Canada 3000 Air Canada (Air Georgian) Air Canada (Air Georgian) Air Canada, American Airlines Air Canada, Midwest Express Airlines (Skyway Airlines) Air Canada (Canadian Regional), Northwest Airlines Air Canada Air Canada (Canadian Airlines) Delta (Atlantic Southeast Airlines) Air Canada, American Airlines Air Canada, Canada 3000, Continental Air Canada, Air Transat, Canada 3000

(continued)



**APPENDIX 13-3 (Continued)**
**SCHEDULED TRANSBORDER SERVICES AS OF DECEMBER 31, 2000**

<i>Airport</i>	<i>Destination</i>	<i>Airline</i>
<b>Toronto (cont'd)</b>	Phoenix	Air Canada, America West Airlines
	Philadelphia	Air Canada, US Airways
	Pittsburgh	Air Canada, US Airways
	Providence	Air Canada (Air Ontario)
	Raleigh/Durham	Air Canada (Canadian Regional)
	Richmond	Air Canada (Air Ontario)
	Rochester	Air Canada (Air Georgian)
	San Diego	Air Canada
	San Francisco	Air Canada, United Airlines
	San Jose	Air Canada
	Seattle	Air Canada
	St. Louis	Air Canada, Trans World Airlines (Chautauqua Airlines)
	St. Petersburg	Air Transat, Canada 3000, Royal Airlines
	Syracuse	Air Canada (Air Georgian)
	Tampa	Air Canada
	Washington/Dulles	Air Canada
	Washington/Reagan	Air Canada, US Airways (Mesa Airlines)
	West Palm Beach	Air Canada, Air Transat
<b>Vancouver</b>	Boston	Air Canada
	Chicago	Air Canada (Canadian Airlines), United Airlines
	Dallas/Fort Worth	Air Canada (Canadian Airlines), American Airlines
	Denver	Air Canada, United Airlines
	Honolulu	Air Canada (Canadian Airlines), Air Transat, Canada 3000
	Houston	Continental
	Kahului	Air Canada, Air Transat, Canada 3000
	Kona	Canada 3000, Royal Airlines
	Las Vegas	Alaska Airlines, Canada 3000
	Lihue	Royal Airlines
	Los Angeles	Air Canada, Alaska Airlines, Canada 3000, United Airlines
	Minneapolis/St. Paul	Northwest Airlines
	New York/Kennedy	Air Canada
	Palm Springs	Alaska Airlines
	Phoenix	Alaska Airlines, America West Airlines
	Portland, Oregon	Air Canada (AirBC), Alaska Airlines (Horizon Air), Delta (Skywest Airlines)
	Salt Lake City	Delta (Skywest Airlines)
	San Francisco	Air Canada (Canadian Airlines), Alaska Airlines, United Airlines
	Seattle	Air Canada (AirBC), Alaska Airlines (Horizon Air), United Airlines (Skywest Airlines)
	Seattle/Boeing Field	North Vancouver Air
	Spokane	Air Canada (Central Mountain Air)
	St. Louis	Trans World Airlines
	Washington/Dulles	Air Canada
<b>Victoria International</b>	Honolulu	Canada 3000
	Las Vegas	Canada 3000
	Seattle	Alaska Airlines (Horizon Air)
<b>Victoria Harbour</b>	Seattle/Boeing Field	Helijet Airways
	Seattle/Lake Union	Kenmore Air
<b>Whitehorse</b>	Juneau	Air North
<b>Winnipeg</b>	Chicago	Air Canada
	Denver	Air Canada (AirBC)
	Las Vegas	Canada 3000
	Minneapolis/St. Paul	Northwest Airlines
	Orlando	Canada 3000

Source: Transport Canada, Air Policy

# PRICE, PRODUCTIVITY AND FINANCIAL PERFORMANCE IN THE TRANSPORTATION SECTOR

# 14

*Lower transport prices continued to sustain economic growth.  
While the demand for transport services was growing,  
fuel prices increases in 2000 were a major concern.*

This chapter examines the productivity performance of the different modes of transportation in Canada and assesses how these productivity gains offset increases in factor prices in transport industries through measures of cost per unit of output. It also reviews the performance of each transport industry segment, highlighting the most recent years for which data are available. The effect of higher fuel prices on each segment of the industry is also explored. At the end of the chapter, a series of tables shows price and output indicators, user and cost savings and cost structures, productivity and unit cost indicators, and the possible effects of fuel price increases.

After a period of robust annual productivity growth in the early 1990s, productivity increases in the transportation industry remained firm at 2.5 per cent a year during the second half of the decade,<sup>1</sup> as shown in Table 14-1. From 1998 to 1999, productivity improved by 2.3 per cent.

When markets are competitive and efficient, some or all benefits of productivity gains can be passed on to users in the form of lower prices, and while the prices of selected transport industries<sup>2</sup> increased nominally by 0.1 per cent during this time, they fell in real terms by 0.8 per cent annually. Thanks to these lower prices, and a growing economy, demand in the transport industry grew during this period. Between 1994 and 1999, the output of large transport firms grew annually by 6.8 per cent, whereas the output of the economy's business sector grew annually by 3.9 per cent. Based on the first half of the year 2000, the output growth of selected transport industries still exceeded the one of the whole economy.

**TABLE 14-1: PERFORMANCE INDICATORS FOR SELECTED TRANSPORT INDUSTRIES AND THE ECONOMY**

	Annual per cent	
	1994 - 1999	1999 - 2000
<b>Productivity</b>		
Selected Transport Industries	2.8	2.3 <sup>1</sup>
Business Economy	1.0	1.7 <sup>2</sup>
<b>Price</b>		
Selected Transport Industries	0.1	3.7 <sup>3</sup>
Business Economy	0.9	4.4 <sup>3</sup>
<b>Output</b>		
Selected Transport Industries	6.8	4.9 <sup>3</sup>
Business Economy	3.9	4.5 <sup>3</sup>

1 Preliminary estimate.

2 Change from 1998 to 1999.

3 Based on data for the first half of the year 2000.

Source: Transport Canada, based on Statistics Canada files

In 2000, the increase in fuel prices was a particular concern. This chapter discusses several effects of this increase, including the rise in total costs that can occur when there are no productivity gains to offset the impact of the price changes, and the increase in transport prices if the fuel cost increments are passed on to transport users. The analysis presents a worst-case scenario, based on the assumptions that 1) all increases in the price of crude oil<sup>3</sup> are transmitted to the transport industry's fuel costs and 2) carriers do not use hedging strategies to minimize the cost increases.

Crude oil prices hit a low of US\$12 a barrel<sup>3</sup> in the first quarter of 1999, and by September 2000 had climbed to US\$34 a barrel, averaging US\$30 a barrel for the year. In 1999, the members of the transport industry did not pay fuel prices that reflected the changes in crude oil prices, so that in 2000 the fuel prices they paid included the

1 Different database definitions, assumptions, coverage, reference years and calculation procedures may produce different results and affect observed trends in productivity and prices. Changes in available databases entail methodological changes that alter the results. This explains differences between the series shown in this annual report and the series presented in previous annual reports.

2 Larger firms in rail freight, air and trucking, or 93 per cent of the revenues of all the firms reviewed in this chapter.

3 Reference price of Cushing.

catch-up in refiners' and distributors' margins. This is why 1997<sup>4</sup> has been used in this report as a base year for analyzing fuel price changes. In 1997, fuel costs accounted for about 11.6 per cent of the transportation sector's total costs.

Although it is unusual for an annual report to examine an issue such as higher fuel prices by simulating its effect, this report does so because the subject is an important one for many and it provides valuable insights. Therefore, in the modal sections of this chapter, the results of such simulations are presented under the heading "Effects of Higher Fuel Prices."

Fuel prices, prevailing during the year 2000, would have increased transport fuel costs by 32 per cent, assuming constant fuel efficiency. Table 14-2 shows that this would cause total costs to increase by 3.7 per cent and that transport prices would have had to rise by 4.2 per cent had the increased fuel costs been passed on totally to transport users.

The effect of increased fuel costs on government carriers has been significantly different. In 1997, government-owned carriers had a lower fuel cost share than commercial carriers — 3.4 per cent compared with 12.8 per cent of total costs. This means that had increased fuel prices been applied, fuel costs would have added an extra 1.1 per cent to public carriers' total costs and 4.1 per cent to business carriers' total costs. However, if the higher fuel costs had been absorbed by users of public carriers' services, transport prices would have climbed by 2.6 per cent. Since public carriers' operating subsidies are equal to their revenues from users, subsidies likely would have increased by as much as transport prices.

**TABLE 14-2: SIMULATION OF THE EFFECT OF 2000 FUEL PRICE INCREASES**

Total Costs, Transport Prices and Subsidies: 1997 Based

	<i>Business Carriers</i>	<i>Public Carriers<sup>1</sup></i>	<i>All Carriers</i>
Fuel Cost Share (per cent of total costs)	12.8	3.4	11.6
Fuel Prices in Cents per Litre	36.7	36.7	36.7
Increase in Fuel Costs (per cent)	32.0	32.5	32.0
Total Cost Increase (per cent)	4.1	1.1	3.7
Transport Price Increase (per cent)	4.3	2.6	4.2
Subsidy Increase (per cent)	N/A	2.8	N/A

<sup>1</sup> Via Rail and public transit systems.

Source: Transport Canada, based on Statistics Canada files

## RAIL INDUSTRY

### THE FREIGHT RAIL INDUSTRY

This section focuses on the productivity and financial performance of the Canadian operations of Canadian National (CN) and Canadian Pacific Railways (CPR). A brief discussion of regional railways is found in the section on financial performance.

The treatment of results and observed trends in productivity and prices in this annual report may differ slightly from than in earlier annual reports, mainly because of: changes in accounting principles by railways; a new approach to dealing with labour restructuring costs; and a modified price index calculation procedure.

In 1999, Canadian operations accounted for 67 per cent of CN's total revenues and 73 per cent of CPR's total revenues.

As a result of strong productivity growth and intense cost reduction efforts, CN and CPR have shown good financial performance in recent years, and despite higher fuel prices in 2000, both reported further improvement in operating ratios to 69.6 per cent and 76.9 per cent, respectively, excluding special charges.

### PRICE AND OUTPUT INDICATORS

From 1994 to 1999, the output of CN's and CPR's freight operations in Canada grew on average by one per cent a year. This modest average rate of growth is explained in part by the use of 1994 — a record year of output growth — as the base year.

During the same period, shippers received a portion of the benefits from the railways' productivity gains: rail freight prices declined nominally by 0.8 per cent a year. It is estimated that the price performance of the two mainline railways has, since 1994, allowed shippers' rail freight costs to be reduced by \$530 million, equivalent to an eight per cent reduction in shippers' rail freight bill over this period.

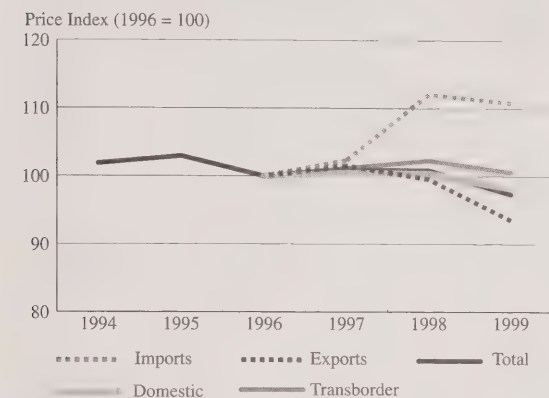
Overseas exports, in particular, were sustained by increasingly lower rail freight rates. Figure 14-1 compares domestic, export, import (traffic from inland points to ports, and traffic from ports to inland points) and transborder (Canada-US) traffic rail price indices from 1994 to 1999.<sup>5</sup> In 1999, the overall freight price index

<sup>4</sup> Table 14-14 at the end of this chapter shows the effect that higher fuel prices have on 1999 data.

<sup>5</sup> 1996 is the first year for which rail price indices of exports, imports and transborder traffic are available.

declined by three per cent; the price decline was more significant in overseas exports than in domestic traffic.

**FIGURE 14-1: RAIL FREIGHT PRICE INDICES  
BY SECTOR, 1994 – 1999**



Source: Transport Canada

## COST STRUCTURE

The total cost of rail freight transportation can be broken down into variable costs and fixed or capital costs. Variable costs, such as labour, fuel and other materials and services, accounted for the majority of total costs (70 per cent) in 1999, while fixed or capital costs, such as depreciation, and leasing expenses, debt costs and return to equity, accounted for the remaining 30 per cent. Since 1994, significant railway capital expenditures have caused capital costs to increase by three per cent.

In recent years, labour costs have continued to decline, a result of several major workforce restructurings in the industry. Between 1994 and 1999, labour cost share decreased from 41 per cent to 37 per cent of total costs. In 1999, fuel costs represented eight per cent of total costs, and materials other than fuel and services accounted for 25 per cent.

## PRODUCTIVITY AND UNIT COST INDICATORS

Between 1994 and 1999, freight railways in Canada showed impressive productivity growth: total factor productivity increased on average by 3.9 per cent a year. More efficient use of variable inputs was the main reason for this trend. The variable factor productivity, which compares output growth with the growth of aggregate non-capital inputs such as labour, fuel and materials, increased by five per cent a year. During the same period, the partial productivity of capital inputs also increased, at a rate of 1.1 per cent a year.

Corresponding to the productivity improvement, the railways' unit cost curve showed a downward trend between 1994 and 1999. The average annual rate of unit cost reduction was 2.5 per cent. Thanks to lower unit costs, CN and CPR have been able to set competitive prices and improve their financial performance at the same time. With 1994 as the base year, the improved productivity performance has allowed the rail industry to achieve total costs in 1999 that are about \$1.2 billion lower than they otherwise would have been. At 18 per cent of the industry cost base, these savings are significant.

## FINANCIAL PERFORMANCE

As Table 14-3 shows, Canadian Class I freight railways continued to enjoy increased profits in 1999, when the average operating ratio declined to 79.7 per cent, excluding unusual charges, an 8-point drop from the 1994 ratio. Without freight rate increases, the railways achieved the higher profitability by improving productivity and reducing costs. Between 1994 and 1999, while operating revenues increased by only 1.2 per cent, operating expenses declined by 9.2 per cent.

The total combined operating income of CN's and CPR's Canadian operations rose sharply in 1999 to \$1.3 billion, an increase of 15 per cent from 1998.

In recent years, the number of regional or short-haul freight railways in Canada has increased significantly.<sup>6</sup> This is one of the main reasons for the 17 per cent increase in these railways' total operating revenues from 1994 to 1999. The average operating ratio in 1999 was affected by restructuring in the rail shortline sector, including a number of new entries, exits, and mergers and consolidations. The increase in operating ratio — 3.7 points in 1999 — should not be perceived as a trend.

6 The number of short-haul railways that filed annual reports with Transport Canada, increased from 16 in 1994 to 29 in 1999.



TABLE 14-3: THE RAIL FREIGHT INDUSTRY'S FINANCIAL RESULTS

	(Millions of dollars)			
	1994	1997	1998	1999
<b>Class I Railways — Canadian Operations</b>				
Revenue	6,426	6,778	6,436	6,502
Expenses <sup>1</sup>	5,635	5,596	5,289	5,184
Operating Income	791	1,182	1,147	1,318
Operating Ratio (per cent)	87.7	82.6	82.2	79.7
<b>Regional/Shortline railways</b>				
Revenue	612	711	749	715
Expenses <sup>1</sup>	511	630	662	658
Operating Income	101	81	87	57
Operating Ratio (per cent)	83.4	88.7	88.3	92.0

<sup>1</sup> Excludes special charges.

Source: Carriers' Annual Reports filed with Transport Canada

### Effects of Higher Fuel Prices

The average fuel price of freight railways was 32 cents per litre in 1997 and declined to 28 cents in 1998–1999. This analysis estimated that average rail diesel prices increased to 43 cents per litre in 2000, a 15 cent increase from the level before the wide fuel price fluctuations that occurred between 1998 and 1999<sup>7</sup>. This equals a 35 per cent increase in fuel costs and would have contributed to a 3.2 per cent increase in total costs. Had the higher fuel costs been absorbed by users, in the absence of any offsetting factors, rail freight rates would have gone up by 3.5 per cent.

CN and CPR reported that fuel costs rose an average of 45 per cent between 1999 and 2000. This was in line with the estimate in Table 14-14, which shows the possible effects of fuel price increases. While these two main railways were able to offset part of these increases by improving fuel efficiency and reducing costs in other areas, they also raised freight rates in the second half of 2000 to compensate for the higher fuel prices.

### VIA RAIL

Over the past decade, VIA Rail's revenues have grown significantly and its cost recovery ratio has doubled.

In April 2000, the Government of Canada announced \$400 million in capital funding to improve VIA Rail passenger services over a five-year period.

### PRICE AND OUTPUT INDICATORS

From 1994 to 1999, VIA Rail significantly improved its operating revenues due to increases in passenger volume. From 1994 to 1999, prices of rail passenger services increased by three per cent a year on average. These price increases were not sufficient to make VIA profitable but meant that VIA Rail's passengers contributed partly to the reduction of VIA Rail's operating deficits. Rail passenger demand grew by about two per cent per year during the same five-year period. In 1999, however, strong growth in demand was the main reason behind an increase in total passenger revenue, which climbed by nine per cent during the year.

By market, long-haul services showed above-average performance. From 1994 to 1999, the output of long-haul services increased by 3.1 per cent a year, and the price of long-haul services increased by 4.3 per cent a year. Over the same period, prices within the Quebec–Windsor corridor increased on average by 2.5 per cent a year, but growth in demand was relatively modest at 0.7 per cent a year. Major price increases had occurred in remote regions in the late 1990s, with prices rising at a rate of 3.5 per cent a year.

### COST STRUCTURE

In 1999, variable costs represented 83 per cent of VIA Rail's total costs, with labour, the largest component, accounting for 40 per cent. Fuel cost share remained relatively low at 3.8 per cent of the total cost, due to 1999's lower average fuel prices. Payments to other rail carriers represented eight per cent of total costs, and marketing costs accounted for six per cent. Other variable costs are non-income taxes, insurance, and other materials and services.

VIA Rail's capital cost share, including the estimated opportunity cost of its capital, accounted for 17 per cent of total costs in 1999.

### PRODUCTIVITY AND UNIT COST INDICATORS

VIA Rail's productivity increased significantly in the late 1990s. Between 1994 and 1999, the company's total factor productivity increased by 28.5 per cent, an annual gain of 5.1 per cent. This robust productivity performance allowed VIA Rail to reduce its cost in nominal terms by \$145 million, or 31 per cent of its cost base over the five-year period.

<sup>7</sup> The sum of 43.2 cents a litre was arrived at by adding an increase of 15.1 cents a litre to the average fuel price of 28.1 cents a litre paid by CN and CPR.

Labour, fuel and services supplied by CN and CPR, and other materials and services can be combined to form the "variable" factor of production of rail passenger services; this eliminates substitution effects between these factors. From 1994 to 1999, the productivity of this variable factor increased on average by six per cent a year. Partial labour productivity grew by 7.7 per cent a year.

## FINANCIAL PERFORMANCE

While VIA Rail still relies on government funding, its operating cost recovery ratio has been continuously rising over the past decade. The carrier reported a revenue/cost ratio of 56.7 per cent in 1999. After accounting for the cost of capital, the cost recovery ratio was 46.5 per cent, as shown in Table 14-4.

Between 1994 and 1999, operating revenues increased by 25 per cent, from demand and price increases. Service rationalization and cost control measures allowed VIA Rail to reduce total operating expenses by 12 per cent during the same period.

VIA Rail made a major commitment to invest in new equipment of approximately \$125 million in the near future. The acquisition of 139 new passenger cars was announced following a commitment by the federal government to provide \$400 million in capital funding to improve passenger rail transportation.

**TABLE 14-4: VIA RAIL'S FINANCIAL PERFORMANCE RESULTS, 1996 – 1999**

	(Millions of dollars)			
	1996	1997	1998	1999
Operating Revenues	173	188	197	216
Operating Expenses <sup>1</sup>	489	429	424	430
Total Cost	544	468	461	464
Cost Recovery Ratio (per cent) <sup>2</sup>	31.7	40.2	42.7	46.5
Operating Subsidies	262	196	182	169

<sup>1</sup> Includes depreciation, but excludes extraordinary charges.

<sup>2</sup> Operating Revenues divided by Total Cost.

Source: Transport Canada, based on Statistics Canada files

## Effects of Higher Fuel Prices

In 1997, VIA Rail paid an average of 32.5 cents<sup>a</sup> per litre for its fuel; it would have paid 44.1 cents per litre in 2000, assuming no hedging program in place. Such a price

increase would have resulted in fuel costs 38 per cent higher than in 1997. VIA Rail had a relatively lower fuel cost share in its total costs (3.8 per cent) because fuel is outweighed by other costs such as labour, marketing and payment for infrastructure access. Nevertheless, the impact of such an increase would have caused VIA Rail's total costs to rise by about 1.6 per cent. Unless other costs could be cut to offset the higher fuel costs, the increased costs would have to be covered in one of two ways: the public would have had to absorb the increase, leading to 4.2 per cent higher fares, or the federal government would have had to raise its subsidy to VIA Rail by 3.9 per cent.

In 2000, VIA Rail appears to have reduced partly the effect of higher fuel prices, thanks to fuel price-hedging programs. The impact of higher fuel prices on the carrier's fuel costs may, however, show up in 2001.

## THE TRUCKING INDUSTRY

This section focuses on the performance of for-hire trucking firms with annual revenues equal to or greater than \$1 million.<sup>9</sup> Individual carriers whose main activity is the movement of household goods (four per cent of larger carrier revenues) have been excluded.

## PRICE AND OUTPUT INDICATORS

From 1994 to 1999, the revenues of the trucking industry as a whole increased by eight per cent a year. This growth came from an increased level of activity and not increased prices, since prices in 1999 were below their 1994 levels. In real terms, the price decline was 1.1 per cent a year. By 1999, the price reductions observed in for-hire trucking activity since 1994 had allowed a reduction of shippers' costs in the order of \$750 million.

While the prices dropped in real terms, they continued to increase at a greater rate than did rail prices. Yet, the trucking industry has continued to make market gains, after the price effect of the growth observed in both the rail and trucking modes has been eliminated. Since 1994, the trucking industry has gained 7.6 percentage points in market share.

<sup>8</sup> The average price was calculated by dividing total costs by litres of fuel consumed by VIA Rail. This price was slightly higher than the average price calculated for CN and CPR. As each carrier has its own fuel price-hedging program, it is not surprising that carriers in the same industry have different average fuel prices.

<sup>9</sup> Main changes from the material presented in earlier annual reports include: the addition of non-transportation revenues and expenses, which improve industry operating ratios; revised estimates of the revenue split between transborder and domestic revenues; and revision of fuel prices and capital stock data.

The prices of domestic intraprovincial trucking services and interprovincial trucking services fell slightly between 1994 and 1999, and the prices for transborder trucking services increased by only 0.8 per cent a year during that period.

Canadian-based transborder trucking operations, in particular, have increased remarkably, with output growth averaging 12 per cent a year. The sources of growth are increased Canada-US trade, deeper penetration of the US market by Canadian-based carriers, and gains by Canadian-based carriers' market share in transborder activities. The latter gains can be explained in part by the low value of the Canadian dollar. From 1994 to 1999, the growth of transborder output was about double the output growth from domestic markets.

Preliminary results for 2000 show that revenue growth was still robust at 9.4 per cent.

## COST STRUCTURE

In the second half of the 1990s, the industry exhibited a stable cost structure. The variable portion averaged 87 per cent, and the capital cost share was 13 per cent. Among variable costs, labour accounted for 45 per cent of total cost, and fuel represented 13 per cent. In 1999, the leasing share in capital and total costs was higher than the 1994-1999 averages for leasing. The proportion of leasing in total cost represented only 3.6 per cent, but 27 per cent of total capital costs.

## PRODUCTIVITY AND UNIT COST INDICATORS

Total factor productivity in the trucking industry increased by two per cent annually between 1994 and 1999, and the productivity of the variable factors of production grew by 2.5 per cent a year. A decline in capital productivity reversed previous trends.

Trucking unit costs in 1999 were one per cent lower than in 1994. After the effects of general inflation are removed, this translates into a cost reduction that had reached \$725 million by 1999, 4.6 per cent of the industry cost base. From 1994 to 1999, trucking cost reductions came from lowering variable costs, since capital costs per unit of production increased during that period.

## FINANCIAL PERFORMANCE

The trucking industry can be viable with an operating margin of about four per cent of revenues. Other transport industries, such as rail, require higher operating margins, as more assets are needed to generate each dollar of revenue.

Between 1994 and 1999, the financial performance of the trucking industry weakened marginally, with prices falling slightly more rapidly than unit costs. In 1999, prices fell more rapidly than costs did. This led to a slight deterioration in operating ratios, which exceeded 95 per cent, as shown in Table 14-5. Still, the financial returns of the trucking industry, as measured by the rate of returns on fixed assets, remain on average, high enough to ensure the long-term viability of the industry.

Based on the performance of large trucking carriers, profitability should have declined slightly in 2000. The operating ratio of the larger carriers rose from 93.9 per cent to 94.5 per cent.

## Effects of Higher Fuel Prices

Before the 1999-2000 fuel price increases, the trucking industry was paying an average of 49 cents a litre for fuel. This analysis assumed that, during the past year, diesel prices increased by 15 cents a litre to 63 cents a litre. This corresponds to diesel prices reported by Statistics Canada, less the Goods and Services Tax (GST) and applicable provincial sales taxes. Such an increase would translate into fuel costs that are 25 per cent higher contributing to an increase in total costs of 3.4 per cent. If the higher fuel costs had been passed on to shippers in 2000, without any offsetting factor, transport prices would have had to go up by 3.5 per cent.

Preliminary data for the first half of 2000 indicates that the fuel price surge increases fuel costs by about 25 per cent, confirming the above estimates Transport price increased by 4.3 per cent, corresponding to a 3.5 per cent increase in transport prices since 1997.

TABLE 14-5: THE TRUCKING INDUSTRY'S FINANCIAL INDICATORS

	(Millions of dollars)			
	1994	1997	1998	1999
Operating Revenues	10,872	14,061	14,600	15,970
Operating Expenses	10,282	13,293	13,788	15,207
Operating Income	590	768	812	763
Operating Ratio (per cent)	94.6	94.5	94.4	95.2
Return on Assets (per cent)	22.4	21.7	20.4	17.7

Source: Transport Canada



## BUS INDUSTRY

The bus transport industry is made up of three segments: intercity bus services, school bus services and urban transit services.<sup>10</sup> The activities of school bus operators are not covered in this chapter. Urban transit services are reviewed in the next section.

## SCHEDULED INTERCITY BUS SERVICES

### PRICE AND OUTPUT INDICATORS

Intercity bus industry revenues fell 2.4 per cent in 1999, leaving them at a level that was still 11 per cent higher than 1994 revenues. Prices increased by 1.7 per cent, whereas output fell by four per cent. Sources of industry revenues were as follows: 84 per cent from passenger services, 12 per cent from parcel services and four per cent from various other activities. These proportions have not changed since 1994.

The level of market share by scheduled bus services seems to have stabilized at a 40 per cent share of passenger service revenues. Back in 1994, the revenue share of operators of scheduled bus services was 53 per cent. The revenue share of charter and tour services reached 43 per cent in 1999. The greatest growth has occurred in the specialized services, such as limousine and sightseeing services. This market segment doubled its share of passenger services, from 8.5 per cent in 1994 to 17 per cent in 1999.

Changes in demand for each type of intercity bus service appear to be related to price changes for the services. Demand for scheduled intercity bus services fell by 20 per cent between 1994 and 1999, as nominal prices for those services went up by seven per cent. Conversely, activity levels increased by 57 per cent for other bus services, whose prices fell by eight per cent.

Over the 1994–1999 period, total output of the bus industry increased by 2.2 per cent a year, while its prices declined by 0.2 per cent annually.

### COST STRUCTURE

The cost structure of the bus industry remained relatively stable. Labour costs represented about 42 per cent of the industry's costs in 1999, compared with 41 per cent in 1994. In 1999, fuel costs represented 8.4 per cent of total costs, versus eight per cent in 1994.

The share of capital costs (leasing, depreciation and financing) increased from 17 to 21 per cent. Operating costs other than fuel and labour changed more significantly, losing 4.5 percentage points from their 1994 level of 33.4 per cent.

### PRODUCTIVITY AND UNIT COST INDICATORS

Despite a small decline in 1999, total factor productivity has increased since 1994 at an annual rate of 3.8 per cent. Trends toward lower capital intensity prevailed until the mid-1990s. Then, between 1996 and 1999, the capital intensity of the industry increased by six per cent. This has contributed to the 26 per cent gains in the productivity of other factors of production. The productivity gains, combined with moderate factor price increases, led to unit cost declines of 1.6 per cent a year. This caused industry costs to drop by \$76 million from the level they would otherwise have reached in 1999. This cost reduction was equivalent to 13 per cent of industry costs in 1999.

### FINANCIAL PERFORMANCE

Table 14-6 shows that between 1994 and 1999 the bus industry achieved operating ratios that generated viable returns. These operating ratios were much lower than those of the early 1990s. The turnaround was achieved in an environment of declining demand for the main revenue segment of the industry, scheduled bus services.

Productivity gains made by the industry were directly responsible for the improvement in the profitability of the intercity bus industry. Prices were not a factor, since they fell during this period.

TABLE 14-6: SUMMARY OF FINANCIAL INDICATORS FOR ALL INTERCITY BUS INDUSTRIES

	(Millions of dollars)			
	1994	1997	1998	1999 <sup>1</sup>
Operating Revenues	579	593	657	641
Operating Expenses	530	513	557	545
Operating Ratio (per cent)	91.6	86.5	84.8	85.1

<sup>1</sup> Preliminary estimate.

Source: Transport Canada, based on Statistics Canada files

10 The 1994–1999 data have been revised to reflect the new North American Industry Classification System (NAICS) and revised capital stock data. Under NAICS, "bus" includes limousine and sightseeing services.



## Effects of Higher Fuel Prices

Because fuel information in the bus industry is incomplete, this assessment uses the fuel prices experienced by the trucking industry. If fuel prices increased from 49 cents a litre to 63 cents a litre, in 2000 as they did for the trucking industry, fuel costs for the bus industry would have risen by 26 per cent in 2000, and total costs would have increased by 2.5 per cent. Intercity bus transport prices would have gone up by 2.5 per cent if the higher fuel costs had been passed on to users.

## URBAN TRANSIT SYSTEMS

This section reviews the activities of urban transit service operators, members of the Canadian Urban Transit Association. Revenues from users grew by 6.6 per cent in 1999. The two per cent decline in operating subsidies was more than offset by the 24 per cent increase in capital subsidies.

## PRICE AND OUTPUT INDICATORS

From 1994 to 1999, the output of transit systems advanced annually by an average of 0.8 per cent. Since 1996, output growth has reached three per cent per year. Between 1994 and 1999, prices increased by 3.2 per cent a year. Since 1996, in concert with stronger output growth, price increases have slowed to 1.6 per cent a year. Overall, transit prices increased on average by 2.3 per cent per year in real terms over this period. This real increase represented, for the riders of transit systems, an additional disbursement of \$186 million by 1999.

## COST STRUCTURE

Capital costs account for 30 per cent of total costs,<sup>11</sup> making the urban transit industry the most capital intensive in the transport sector. In transport sectors other than transit, the cost of capital represents less than one fifth of total costs.

By far the most labour-intensive industry of the transport sector, urban transit had labour costs of as much as 51 per cent of total transit costs in 1999. In comparison, the labour cost share of all other transport sectors averaged 37 per cent.

Two factors explain this. The first is the cost of transit worker's salaries, which have been higher than average salaries by about \$725 million over the 1994–1999 period, a sum that is close to half of transit operating subsidies. While the rail industry, for example, can offset the impact of higher salaries through productivity gains, such gains are not attained in transit systems. The second factor is the cost of goods and services other than fuel which are far lower than in other transport sectors: these costs account for 14 per cent of total costs in transit systems and 32 per cent of total costs in the rest of the transport industry. Outsourcing is less common in transit systems than in other transport sectors.

## PRODUCTIVITY AND UNIT COST INDICATORS

The total factor productivity of transit systems gained 0.4 per cent in 1999, but it is below the 1994 levels. The performance of the variable factors of production was more robust, growing at a pace of 0.8 per cent a year. The annual productivity decline of capital (-3.6 per cent) reflected the increased capitalization of transit systems.

Per unit of output, transit costs fell by 1.3 per cent between 1994 and 1999. In real terms, the lower unit costs included in 1999 savings were equivalent to \$58 million. The reduction of variable costs was three times that amount.

## FINANCIAL PERFORMANCE

Table 14-7 shows that the total cost of transit systems was estimated at almost \$4.1 billion in 1999. Cash operating costs were close to \$2.9 billion, an increase of \$100 million over the previous year. Users paid 45 per cent of the total cost of the system. Cost recovery went up steadily from 1994 to 1999. Operating subsidies were relatively stable, while capital subsidies continued their strong climb. This trend may be reversed now that Ontario, which accounts for 75 per cent of all capital subsidies, has reduced its financial transfers to local authorities.

<sup>11</sup> A different methodology was used to gather data for this annual report than was used for last year's report: Industry capital stock estimates have been revised, affecting the cost of capital. Under the previous methodology, the capital cost share would have been 27 per cent. This reduces the cost share of other factors of production.

**TABLE 14-7: SUMMARY OF FINANCIAL INDICATORS FOR TRANSIT SYSTEMS**

	(Millions of dollars)			
	1994	1997	1998	1999
Operating Revenues	1,519	1,712	1,744	1,855
Cash Operating Expenses	2,745	2,788	2,789	2,879
Capital Cost	938	1,089	1,132	1,201
Total Cost	3,567	3,877	3,920	4,080
Operating Subsidies	1,579	1,495	1,523	1,492
Capital Subsidies	414	641	858	1,068
Cost Recovery Ratio (per cent)	41.2	44.2	44.5	45.5

Source: Transport Canada, based on Statistics Canada files

## PERFORMANCE OF TRANSIT SYSTEMS: SELECTED PROVINCES

This section examines key indicators of the performance of transport systems for British Columbia, Alberta, Ontario and Quebec, as shown in Table 14-8. The transit systems of other provinces are small; together, they account for 5.1 per cent of transit passenger revenues in Canada. More importantly, the analyses of individual provinces' systems were restricted by data limitations.

Ontario has the highest unit costs and the highest prices, while Alberta has the lowest unit costs and prices among the selected provinces. While Quebec has higher productivity than does Alberta, it is second in terms of unit costs, because it pays the highest salaries in the country.

In 1999, the revenue shortfall of all systems was around \$2.2 billion; this figure has been remarkably stable over time. The Ontario transit systems had the highest cost recovery of all systems, at more than 50 per cent of their total costs. British Columbia had the greatest revenue shortfall per passenger, at more than \$2 million, because of low prices relative to unit costs, and the fact that transit riders were travelling longer distances than elsewhere in the country.

### Effects of Higher Fuel Prices

Transit systems' energy costs were low in 1999, at five per cent of total costs. Electricity use made up an estimated 40 per cent of energy costs. Because of tax exemptions, transit systems paid lower fuel prices — for instance, between 35 and 40 cents per litre — than did the trucking or bus industries, where effective fuel prices averaged 49 cents a litre in 1999.

**TABLE 14-8: FINANCIAL INDICATORS OF TRANSIT SYSTEMS FOR SELECTED PROVINCES, 1999**

	Quebec	Ontario	Alberta	British Columbia	Total <sup>1</sup>
Price levels (Canada = 100.0)	83.4	122.0	71.9	90.9	100
Total factor productivity (Canada = 100.0)	121.9	89.2	110.8	98.0	100
Total unit cost (Canada = 100.0)	88.5	113.3	83.4	103.2	100
Cost recovery (per cent)	39.7	48.7	41.6	37.5	44.5
Revenue Shortfall Per Passenger <sup>2</sup> (millions of dollars)	1.28	1.66	1.52	2.03	1.54

1 Includes the rest of Canada.

2 Difference between total costs and autonomous revenues; it can be higher than operating subsidies, as it includes higher depreciation and capital costs than reported by transit systems.

Source: Transport Canada, based on Statistics Canada files

By the end of 2000, transit systems may have experienced fuel cost increases in the order of 29 per cent over the 1997 base average fuel price of 37.5 cents a litre. If the higher fuel costs were to be absorbed by users, in the absence of any offsetting factors, fares would need to go up by 2.4 per cent. Since operating subsidies are about as large as passenger revenues, the subsidies would have to increase by the same amount as fares. In provinces where electricity was used as an energy source for motive power,<sup>12</sup> the impact of increased fuel prices on total transit costs was limited to less than one per cent. In other provinces, the impact would be twice as much.

## AIR TRANSPORT INDUSTRY

This section does not present in detail the performance of individual carriers. Instead, the analysis is mainly concerned with the overall performance of the industry. The definition of this industry used for this analysis is limited by data availability; for the purpose of this section, the industry is made up of most of Level I and II air carriers<sup>13</sup> operating in 1999, namely Air Canada, Canadian Airlines, Air Nova, Air Ontario, Ontario Express, Air BC, Inter-Canadien,<sup>14</sup> Canadian Regional, Air Transat, Canada 3000, Royal Air and WestJet. The last four carriers are now included in the productivity and cost analyses. This group of air carriers accounts for 85 per cent of the industry's total revenues, generating total revenues of \$11.5 billion in 1999, a 10 per cent increase over 1998 revenues.

<sup>12</sup> Québec, Ontario, Alberta and British Columbia

<sup>13</sup> More detail is available on Transport Canada's Web site (<http://www.tc.gc.ca/Actsregs/ct-ltc/ct1.html>).

<sup>14</sup> In 2000, a number of these carriers had been consolidated, (e.g., Air Canada and Canadian Airlines; all Air Canada's affiliates) Inter-Canadien was no longer operating.

## PRICE AND OUTPUT INDICATORS

In 1999, the air transport industry benefited from an increase in prices and in demand. Industry prices increased by 5.3 per cent, and passenger and freight services both grew by 4.4 per cent, with most growth occurring in the second half of the year. Most of the factors that affected industry performance in 1998 were no longer present. The last phase of air navigation fees was completed in 1999, and these fees, which replaced the Air Transportation Tax (ATT), affected the price performance of Canadian airlines. This was significant for regional and discount carriers in short-haul markets. From 1997 to 1999, carriers' prices in these markets rose by 9.5 per cent. Without the navigation fees, carriers' prices would have increased by one per cent. Consumers in the end faced marginally higher air transportation costs, since the navigation fees replaced the ATT.

From 1994 to 1999, the output of the air transport industry increased by 54 per cent, but average industry prices increased by only 5.8 per cent. The prices of domestic passenger services rose by 2.4 per cent; were it not for the air navigation service fees, domestic passenger prices in 1999 would have been about the same as in 1994, further stimulating domestic demand, which actually increased by 35 per cent at any rate. The transborder markets are the only segment that experienced growth in both price and output: Prices increased by 39 per cent and output increased by 73 per cent. The 1999 fares in other international markets remained lower than those paid in 1994, but they have been growing in recent years, by 2.9 per cent in 1998 and 2.4 per cent in 1999. While demand for foreign travel to markets outside the United States exhibited an average increase of almost 10 per cent a year, growth in overall demand slowed to four per cent in recent years.

Airline revenues from freight activity increased by 34 per cent between 1994 and 1999, thanks to a 31 per cent increase in the volume of air freight. Air cargo rates grew only by two per cent.

Between 1994 and 1999, air carriers' prices rose at rates exceeding by 0.2 per cent the economy's rate of inflation. The cost to airline users did not go up, since the increase in carrier prices was offset by the elimination of the air transportation taxes.

During the first six months of 2000, output grew by 3.5 per cent, and prices increased by 4.9 per cent.

## COST STRUCTURE

The split between variable and capital costs changed little in the last year; variable costs stood at 82 per cent of total costs, and capital costs comprised 18 per cent of total costs. However, during the last six years, there were some major shifts within the variable cost group. Labour costs represented approximately 22 per cent of total costs in 1999, about the same as in 1997, but were 2.2 percentage points lower than 1994's labour costs. Fuel cost share was down to 12 per cent of total costs in the aviation sector in 1999, from a 15 per cent share in 1997.

Other variable costs represented a cost share of 48 per cent in 1999, significantly higher than the 43 per cent share of 1994. Increases in navigation and landing fees were largely responsible for this change: Those fees doubled from their mid-1990s level of three per cent of total costs.

The capital cost share accounted for some 18 per cent of total costs, having dropped back to 1996 levels from the 20 per cent share it held in the mid 90s. Airline capital costs declined because airlines divested themselves of and disposed of assets. The value of fixed assets owned by Canadian airlines fell from \$4.4 billion to \$3.2 billion from 1994 to 1999, as airlines moved increasingly to leasing. Leasing costs made up 54 per cent of total capital costs in 1999; in 1994, they accounted for 40 per cent.

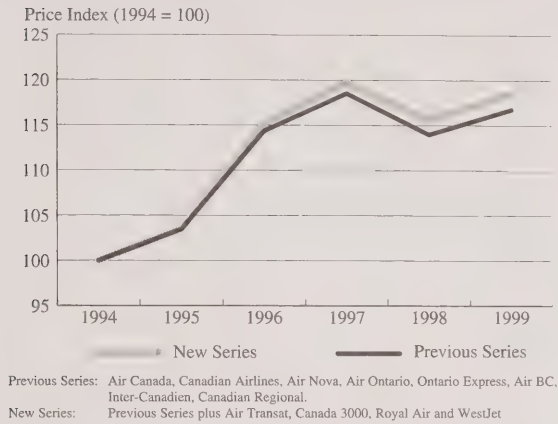
## PRODUCTIVITY AND UNIT COST INDICATORS

Between 1994 and 1999, total factor productivity of the air transport industry as a whole increased by 17 per cent, with major gains in 1996 and 1997. Productivity dropped 3.8 per cent in 1998, but regained 2.4 per cent in 1999, to return to near-1997 levels. As Figure 14-2 shows, the broader base of analysis alters the trends only marginally.

Since 1994, the air industry's unit costs have increased annually by 0.4 per cent. In 1998, lower productivity and major increases in factor prices contributed to unit costs rising by 7.7 per cent. In dollar terms, this added almost \$1 billion to the cost base of the airlines. In 1999, unit costs increases were limited to 1.6 per cent. Factor prices, most notably labour and capital, continued to rise, but the impact of the 4.1 per cent increment in factor prices was mitigated by productivity gains. Total costs for industry dropped by \$18 million in 1999. Some carriers experienced significant cost increases in 1999. Thanks to major cost reductions in 1996 and 1997, industry costs, at \$72 million, were lower in 1999 than in 1994. In comparison, from 1991 to 1994, the air transport industry realized cost reductions of about \$750 million.



FIGURE 14-2: PRODUCTIVITY TRENDS IN THE AIR TRANSPORT INDUSTRY, 1994 – 1999



Source: Transport Canada

## FINANCIAL PERFORMANCE

In 1999, the operating income of the Canadian carriers rose by \$157 million. While most years, the average operating ratios of the two main airlines — Air Canada and Canadian Airlines — stayed above 98 per cent, the burden of past losses — \$2 billion since 1991 — became unbearable and led to a major restructuring of the industry.

In 2000, Air Canada's profitability was adversely affected by non-recurring charges associated with the restructuring process and by higher fuel costs. The carrier reported an operating loss of \$101 million for 2000, which was largely caused by non-recurring items totalling \$282 million, including one-time labour expenses of \$178 million related to a new collective agreement with pilots, \$32 million to plan for the pilot strike threat, and \$72 million to integrate customer services.<sup>15</sup> Excluding the non-recurring expenses, Air Canada had an operating income of \$181 million, as shown in Table 14-9, with an operating ratio of 98.3 per cent.

TABLE 14-9: SUMMARY OF FINANCIAL RESULTS FOR THE AIR TRANSPORT INDUSTRY

	(Millions of dollars)				
	1994	1997	1998	1999	2000
<b>Air Canada and Canadian Airlines</b>					
Revenue	6,690	8,648	9,103	9,706	10,740
Expenses <sup>1</sup>	6,678	8,182	8,981	9,471	10,559
Operating Income	11	465	122	235	181
Operating Ratio (per cent)	99.8	94.6	98.7	97.5	98.3
<b>Larger Independent Carriers</b>					
Operating Income	30	61	36	80	N/A
Operating Ratio (per cent)	95.2	94.3	98.2	95.9	N/A

1 Excluding \$282 million non-recurring expenses in 2000.

Source: Air Canada and Canadian Airlines figures for 1994 – 1998 have been taken from Air Canada's and Canadian Airlines International's annual reports. Figures for 1999 – 2000 were reported by Air Canada. Figures for the larger independent carriers were provided by Transport Canada, based on Statistics Canada files

The independent carriers — Air Transat, Canada 3000, Royal Air and WestJet — showed mixed financial performance, with some being profitable and some not so successful. As a group, they had an average operating ratio of 96 per cent in 1999, down from 98 per cent in 1998.

The consolidation of the air industry is continuing. Recently, Canada 3000 announced the purchase of Royal Air.

### Effects of Higher Fuel Prices

In 1997, the airline industry paid, on average, 28.4 cents a litre for jet fuel. This analysis assumed that fuel prices rose 11 cents to reach 39.4 cents by 2000, a 39 per cent increase and 55 per cent from lower 1999 prices reported by Air Canada in its 2000 fourth quarter report. This would have led to an increase in total costs of 5.9 per cent since 1997. If users absorbed all of the higher fuel costs, in the absence of any offsetting factors, transport prices would need to rise by 6.1 per cent. The estimates of price increases in the first half of the year seem to indicate that the industry has either not passed along the fuel cost increases or have offset the increase through efficiency gains.

15 Air Canada official press release, February 2001



TABLE 14-10: PRICE AND OUTPUT INDICATORS FOR TRANSPORT INDUSTRIES, 1991 – 1999

	Price changes (Annual per cent increase)				Output changes (Annual per cent increase)			
	1991–1994	1997/98	1998/99	1994–1999	1991–1994	1997/98	1998/99	1994–1999
CN and CPR total	(1.4)	(0.3)	(2.9)	(0.8)	3.7	(4.8)	4.1	1.0
VIA Rail								
Corridor	5.3	6.7	(0.9)	2.5	0.1	(3.7)	9.7	0.7
Long haul	6.4	8.6	(6.9)	4.3	2.7	(0.4)	18.3	3.1
Remote-regional	(2.0)	14.2	(8.3)	3.5	5.5	(7.6)	13.6	(0.2)
Total	5.0	7.2	(2.8)	3.0	1.0	(1.6)	12.9	1.7
Trucking								
Intraprovincial	(0.1)	(1.5)	(2.3)	(0.6)	7.4	6.9	1.9	6.1
Interprovincial	1.2	(2.8)	1.1	(1.1)	5.5	4.0	2.4	5.5
Transborder	1.6	2.0	1.9	0.8	17.4	4.5	18.8	12.3
Total trucking	0.7	(0.6)	(0.1)	(0.3)	9.9	4.4	9.5	8.3
Intercity Bus Industry								
Regular bus services	0.5	0.6	3.3	1.4	(3.5)	(0.6)	(6.0)	(4.3)
Charter bus services	(4.6)	(4.3)	5.5	(1.6)	7.7	28.3	(12.6)	6.6
Total bus	(0.9)	(0.9)	1.8	(0.2)	0.1	11.6	(4.1)	2.2
Transit Industry total	4.1	1.2	1.0	(2.1)	(1.7)	0.6	(0.1)	0.8
Air Transport Industry								
Domestic passenger	2.2	4.3	5.7	0.5	(1.0)	5.8	2.3	6.2
International passenger	0.3	3.5	6.2	1.8	3.7	3.4	5.9	10.4
Air freight	(3.8)	5.5	(0.4)	0.4	0.9	(2.4)	7.9	5.6
Total air industry	0.9	3.7	5.3	1.1	1.2	7.8	4.4	9.0
Selected Transport Industries <sup>1</sup>								
Freight	(0.2)	(0.4)	(1.1)	(0.5)	6.9	2.3	7.6	6.2
Passenger	1.3	3.8	6.0	1.2	1.2	4.5	4.3	8.4
Total	0.1	0.9	1.1	0.1	5.5	3.4	6.7	6.8
Total Transport <sup>2</sup>								
Business carriers	0.1	0.8	1.1	0.1	5.4	3.6	6.5	6.7
Public carriers	4.2	1.8	0.6	3.2	(1.5)	0.4	6.1	0.9
Total	0.4	0.9	1.1	0.3	4.9	3.4	6.5	6.3

1 CN and CPR Rail, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-11: PRICE REDUCTION AND COST SAVINGS IN TRANSPORT INDUSTRIES BETWEEN 1994 AND 1998

	CN and CPR	VIA Rail	Trucking	Intercity bus	Transit	Airlines	Larger industries <sup>1</sup>	Total <sup>2</sup>
Price Reduction (\$ million)	531	(18)	750	32	(186)	(304)	977	805
Price Reduction (Per cent)	8.2	(8.2)	4.7	5.0	(10.0)	(2.6)	2.9	2.2
Cost Saving (\$ million)	1,101	145	726	76	(58)	72	1,899	2,063
Cost Saving (Per cent)	17.0	31.3	4.6	12.7	(1.4)	0.6	5.3	5.6

1 CN and CPR Rail, and the trucking and airline industries.

2 Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-12: COST STRUCTURE OF TRANSPORT INDUSTRIES, 1991, 1994 AND 1998 – 1999

(Per cent of total costs)

		<i>CN and CPR</i>	<i>VIA Rail</i>	<i>Trucking</i>	<i>Intercity Bus</i>	<i>Transit</i>	<i>Airlines</i>	<i>Larger Industries<sup>1</sup></i>	<i>Total<sup>2</sup></i>
<b>1991</b>	Variable	70.1	80.4	86.4	81.5	75.6	80.5	79.4	79.0
	Labour	40.8	40.1	48.1	39.9	49.5	26.0	39.9	39.9
	Fuel	8.4	3.3	11.8	8.0	3.8	14.2	10.3	10.3
	Other	20.9	37.0	26.5	33.6	22.3	40.3	29.2	28.8
	Capital	29.9	19.6	13.6	18.5	24.4	19.5	20.6	21.0
<b>1994</b>	Variable	72.8	80.5	87.7	82.6	73.7	80.0	81.3	80.3
	Labour	41.3	40.4	47.2	41.2	54.2	23.3	40.6	40.6
	Fuel	8.1	2.9	12.6	8.0	5.0	13.7	10.6	10.6
	Other	23.4	37.2	27.9	33.4	14.5	42.9	30.1	19.7
	Capital	27.2	19.5	12.3	17.4	26.3	20.0	18.7	10.3
<b>1998</b>	Variable	71.2	83.3	86.8	79.3	70.2	82.2	82.0	80.7
	Labour	37.3	40.1	45.6	41.7	51.1	21.3	37.4	37.4
	Fuel	7.9	3.8	13.0	9.1	4.9	11.9	10.7	10.7
	Other	26.0	39.4	28.1	28.5	14.2	48.9	33.9	19.3
	Capital	28.8	16.7	13.2	20.7	29.8	17.8	17.6	7.3
<b>1999</b>	Variable	70.3	83.5	86.5	79.2	69.7	82.4	82.0	80.7
	Labour	38.0	40.6	45.5	41.7	50.8	21.9	37.6	37.6
	Fuel	7.2	3.8	12.9	8.4	5.0	12.0	10.7	10.7
	Other	25.1	39.2	28.1	29.0	13.9	48.5	33.6	19.3
	Capital	29.7	16.5	13.5	20.8	30.3	17.6	18.0	7.6

<sup>1</sup> CN and CPR Rail, and the trucking and airline industries.<sup>2</sup> Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

TABLE 14-13: EFFICIENCY INDICATORS, TRANSPORT INDUSTRIES, 1994 TO 1999

		<i>Productivity (Annual per cent increase)</i>				<i>Unit Costs (Annual per cent increase)</i>			
		<i>1991–1994</i>	<i>1997/98</i>	<i>1998/99</i>	<i>1994–1999</i>	<i>1991–1994</i>	<i>1997/98</i>	<i>1998/99</i>	<i>1994–1999</i>
<b>CN and CPR Rail</b>	Variable	4.9	0.8	8.0	5.0	(1.9)	(3.8)	(5.1)	(3.3)
	Capital	2.4	(4.2)	3.3	1.4	(6.5)	0.7	(1.3)	(0.6)
	Total	4.2	(0.6)	6.6	4.0	(3.3)	(2.5)	(4.0)	(2.5)
<b>VIA Rail</b>	Variable	2.3	(1.2)	11.7	6.0	(2.6)	1.7	(12.0)	(4.2)
	Capital	5.8	3.3	(18.1)	1.8	(2.8)	(2.3)	(6.9)	(6.7)
	Total	3.0	(0.5)	6.1	5.3	(2.6)	1.0	(10.8)	(4.6)
<b>Trucking Industry</b>	Variable	1.2	3.5	0.8	2.5	0.2	(1.3)	0.3	(0.5)
	Capital	4.2	(2.5)	(2.0)	(0.9)	(3.5)	2.6	2.5	1.6
	Total	1.6	2.7	0.4	2.1	(0.3)	(0.8)	0.6	(0.2)
<b>Intercity Bus Industry</b>	Variable	3.1	6.6	(0.3)	4.8	(2.0)	(4.3)	1.7	(2.5)
	Capital	5.2	(0.6)	(0.2)	(0.2)	(4.6)	3.2	2.2	2.0
	Total	3.5	5.4	(0.3)	3.8	(2.5)	(2.9)	1.8	(1.6)
<b>Transit</b>	Variable	2.3	1.2	1.6	0.8	1.7	(0.8)	(1.9)	0.2
	Capital	(1.4)	(3.9)	(2.6)	(3.6)	5.2	3.8	0.7	4.2
	Total	1.4	(0.3)	0.4	(0.4)	2.5	0.5	(1.1)	1.3
<b>Air Transport Industry</b>	Variable	4.2	(6.2)	2.0	2.0	(2.8)	7.7	2.0	1.1
	Capital	5.2	7.0	4.1	8.3	(1.7)	7.8	(0.4)	(2.5)
	Total	4.4	(4.0)	2.4	3.1	(2.6)	7.7	1.6	0.4
<b>Larger Transport Industries<sup>1</sup></b>	Variable	3.2	(0.3)	2.4	2.8	(1.4)	1.1	(0.1)	(0.5)
	Capital	3.7	(0.1)	1.7	2.8	(4.3)	3.6	0.3	(0.5)
	Total	3.3	(0.3)	2.3	2.8	(2.0)	1.5	(0.0)	(0.5)
<b>Total Transport<sup>2</sup></b>	Business Carriers	3.3	(0.2)	2.2	2.8	(2.0)	1.5	0.0	(0.5)
	Public Carriers	1.6	(0.3)	0.9	0.2	1.8	0.6	(2.2)	0.6
	Total	3.0	(0.2)	2.1	2.5	(1.4)	1.3	(0.2)	(0.4)

<sup>1</sup> CN and CPR Rail, and the trucking and airline industries.<sup>2</sup> Excludes the shipping industry.

Source: Transport Canada, based on Statistics Canada and carriers' files

**TABLE 14-14: SIMULATED 2000 FUEL PRICE ON TOTAL COSTS, TRANSPORT PRICES AND SUBSIDIES**

	<i>Fuel Cost Share (per cent)</i>		<i>Fuel Cost Change (per cent)</i>		<i>Total Cost Change (per cent)</i>	
	1997	1999	1997	1999	1997	1999
CN and CPR	9.1	7.9	32.7	51.5	3.0	3.7
Trucking	13.2	13.0	25.5	28.9	3.4	3.7
Air Transport Industry	15.2	11.9	38.9	55.0	5.9	6.6
Intercity Bus Industry	9.7	9.1	25.7	29.2	2.5	2.5
Commercial Carriers <sup>1</sup>	12.8	12.8	32.0	41.2	4.1	4.7
VIA Rail	3.8	3.8	38.3	44.6	1.6	1.7
Transit Industry	3.2 <sup>2</sup>	3.1 <sup>2</sup>	31.6	46.2	1.0	1.3
Public Carriers <sup>3</sup>	3.4	3.2	32.5	46.0	1.1	1.4
<b>Total<sup>4</sup></b>	<b>11.6</b>	<b>10.5</b>	<b>32.0</b>	<b>41.3</b>	<b>3.7</b>	<b>4.3</b>

	<i>Fuel Prices (cents/litre)</i>		<i>Transport Price Change (per cent)</i>		<i>Subsidy Change (per cent)</i>	
	1997	1999	1997	1999	1997	1999
CN and CPR	32.0	28.1	3.5	4.1	N/A	N/A
Trucking	50.6	48.4	3.5	4.0	N/A	N/A
Airline Industry	28.4	24.3	6.1	7.1	N/A	N/A
Intercity Bus	50.3	48.0	2.5	2.4	N/A	N/A
Business	36.7	33.5	4.3	5.0	N/A	N/A
VIA Rail	32.5	29.8	4.2	3.8	3.9	4.3
Transit	37.5	34.2	2.4	3.0	2.7	3.5
Government	36.7	33.6	2.6	3.1	2.8	3.6
<b>Total</b>	<b>36.7</b>	<b>33.5</b>	<b>4.2</b>	<b>4.9</b>	<b>N/A</b>	<b>N/A</b>

1 CN and CPR, and the trucking, bus and airline industries.

2 Excludes the estimated cost of electricity used as motive power.

3 VIA Rail and Transit Systems.

4 Excludes the shipping industry.

Source: Transport Canada based on Statistics Canada and carriers' files





ISBN-0-662-29917-5



Cat. No. T1-10/2000E  
ISBN 0-662-29917-5

0321

Également disponible en français sous le titre « Les transports au Canada 2000 »









